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CONTENTS.

I. List of the Noctuidae of North America. By AUG. R. GROTE, . 1

II. Catalogue of the Coleoptera from the Region of Lake Ponchartrain, La. By S. V. SUMMERS, M. D. 78

III. Catalogue of Boleti of New England, with Descriptions of New Species. By CHAS. C. FROST, ... 100

IV. On the Species of Helicopis inhabiting the Valley of the Amazon. By AUG. R. GROTE, ... 106

V. Descriptions of New Noctuidae. By H. K. MORRISON, ... 109

VI. Observations on North American Moths. By LEON F. HARVEY, A. M., M. D. 118

VII. Additions to the "List of North American Noctuidae." By AUG. R. GROTE, ... 122

VIII. Land and Fresh Water Shells of the State of New York. By JAMES LEWIS, ... 127

IX. New Noctuae. By AUG. R. GROTE, ... 143

X. Notes on American Lepidoptera, with Descriptions of twenty-one New Species. By AUG. R. GROTE, ... 145

XI. Determination of the Species of Moths Figured in the "Natural History of New York." By AUG. R. GROTE, ... 164

XII. A List of the Leptidae, Mydaidae and Dasypogonina of North America. By CH. R. OSTEN SACKEN, ... 169

XIII. Description of a New Species of Calocampa. By J. A. LINTNER, 188

XIV. On the species of Calocampa. By H. K. MORRISON, ... 190

XV. On the allied Species of Noctuidae inhabiting Europe and North America. By AUG. R. GROTE, ... 193

XVI. On Attacus (Samia) Columbia and its Parasites. By H. A. HAGEN, 201

225297

XVII. Supplement to the List of North American Noctuidae. By AUG. R. GROTE, ... 209

XVIII. Check List of North American Sphinges. By AUG. R. GROTE, 224

XIX. North American Pyralides. By AUG. R. GROTE, ... 229

XX. Synonymic List of the Butterflies of North America, North of Mexico. By S. H. SCUDDER, ... 233

XXI. Observations on North American Moths (Second Paper). By LEON F. HARVEY, A. M., M. D. 270

XXII. Synopsis of the Discomycetous Fungi of the United States. By M. C. COOKE, M. A. 285

XXIII. On the genus Agrotis with Additions to the List of North American Noctuidae. By AUG. R. GROTE, ... 301

XXIV. On the allied Species of Noctuidae inhabiting Europe and North America (Second Paper). By AUG. R. GROTE, ... 313

Errata, ... 315

Index to Plates, ... 316

General Index, ... 317

BULLETIN

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BUFFALO SOCIETY OF NATURAL SCIENCES.

VOLUME II.

I. List of the Noctuidae of North America

BY AUG. R. GROTE.

[*Read before this Society, March* 6, 1874.]

WHILE preparing the following list of North American Noctuidae, as large material as could possibly be procured has been examined, and many comparisons with the European genera of the group have been made. These comparisons were the more necessary since the genera of M. Guenée, in the Species Général, under which alone our species have been hitherto arranged, have not stood the test of recent critical examination. Accordingly other characters, principally pointed out for the first time by Lederer, are here applied to the definition of our American forms. Thus the following list is less a compilation, than an original treatment of the group, and though the generic changes here adopted have in great part been announced in various recent Papers, not a few are here made for the first time. I have also been able to correct here a few of the generic changes proposed by myself in former writings (Bulletin, Vol. 1, pp. 95–128).

It is beyond dispute that we should desire to know the best that has been written on any subject. But to know the best it is necessary to read with system and with judgment. And the literature of the North American Noctuidae requires the very careful reading of at least three authors. Walker, who has, as we have elsewhere

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pointed out,[1] compiled for us the most complete bibliography of the group; Guenée, who has furnished us with the best descriptions of the species, and Lederer, who has given us the best definitions of the genera. The work of Mr. Walker is excellent in its mechanical construction, but worthless in its original matter. How exceedingly worthless, after having worked through the descriptions in the British Museum Lists, and examined the collection in the British Museum, I cannot find language to express. The work of M. Guenée is most excellent where that of Mr. Walker is so defective, and we have all studied with pleasure descriptions for the greatest part so easy to identify. But when we come to study the structural characters of the Noctuidae, it is evident that M. Guenée can no longer help us, while Lederer has undoubtedly given us invaluable information on this point. Dr. Packard has also written upon the present group, and in particular we have an article in which the systematic position of the genus Eudryas is discussed. It seems to us that Dr. Packard has followed Dr. Boisduval (and perhaps Dr. Herrich-Schaeffer), in referring Eudryas to the Castniares rather than to the present group, and that the observations made upon the genus in all its stages warrant his interpretation of its position. And if we have studied carefully Dr. Packard's writings, with the view of arriving at a proper understanding of the writer's mind, we must have become satisfied that we can fully trust him in a question like the present, which requires a delicate balancing of affinities and analogies, and a wide acquaintance with the structure of the Articulates.

The three independent Groups here catalogued, viz., Bombyciae[2] (*Cymatophorinae*), Noctuae (Noctuelitae *Latr.*), and Noctuo-Phalaenidi, may be distinguished by structural characters. The Bombyciae and the Noctuelitae nearly agree in the position of vein 5 on the primaries, which has its origin nearer to 4 than to 6, whereas in the Noctuo-Phalaenidi the position of this vein is midway between 4 and 6. These two groups further agree in the presence of ocelli, which are wanting in the Noctuo-Phalaenidi and also in the Geometrae. The Bombyciae, however, differ from the Noctuae by the course of vein 7 of the hind wings, which springs from the upper margin of the cell. These three Groups, to the exclusion of the Deltoids, correspond with Prof. Packard's "Noctuelitae." The Deltoids however agree with the Noctuae in the presence of but two internal veins (1 and 1 *a*) on the hind wings, whereas the true Pyralids have three. I have treated them as a sub-group of the Noctuae, as also Prof. Packard's *Noctuinae* and *Catocalinae.*

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[1] Trans. Am. Ent. Soc. 2, p. 68.

[2] See Harvey, Bul. Buf. Sco. Nat. Sci. 1, p. 276.

Several species of Noctuidae, belonging to the genera Agrotis, Hadena and Mamestra, are interesting to Economic Entomology from the depredations they commit upon cultivated plants. In the various State Reports on Insects Injurious to Vegetation, I have not noticed any appreciation of the structural characters that separate these genera. The perfect insects belonging to the three genera nearly agree in palpal structure, in the proportionate wings and in the absence of scale tufts on the front or vertex of the head. They differ as follows:

Eyes naked, without lashes. Thorax without divided dorsal longitudinal, or posterior scale tuft; abdomen untufted. Middle and hind tibiae always, fore tibiae sometimes, with spines ....**Agrotis.**

Eyes naked, without lashes. Thorax with divided dorsal longitudinal and posterior tufts; abdomen more or less distinctly tufted. All the tibiae unarmed ....**Hadena.**

Eyes hairy. Thorax with dorsal and posterior tufts; abdomen more or less distinctly or entirely tufted. All the tibiae unarmed............**Mamestra.**

Minor divisions are established on the details of antennal structure and the form of the genital pieces.

The subject of geographical distribution is one of very high importance to a proper understanding of our American Noctuidae; those species indicated by a star (*) in the present List are considered to occur both in America and in Europe. Where the genus is represented in the European fauna, the same mark is affixed to the generic title. Below each genus the geographical distribution in North America is approximately indicated.

There will be found in the List the names of a number of species, for the most part excellently described by M. Guenée, in the Species Général, which are yet unidentified in our collections; to these a dagger (†) is prefixed. The same sign precedes nearly all the names taken from the British Museum Lists; unfortunately there is no present prospect that these latter will become available, although but few of Mr. Walker's descriptions are not referred to here.

With regard to the synonymy adopted, the oldest not preoccupied names have been preferred, and I have endeavored to restore all the generic names originally proposed by Hübner and afterwards partly misapplied by, or wrongly credited to Treitschke. In the synonymy reference is made to Hübner's "Tentamen," a Paper published by the author anterior to the "Verzeichniss," and alluded to by Ochsenheimer in his fourth volume. We are obliged to Mr. S. H. Scudder for the reprint of the rare paper.

Hübner's works need not my praise, else freely given. The student who has read the foreword to the Verzeichniss, dated the twenty-first of September, 1816, from Augsburg, and does not honor its author, must be either obtuse or prejudiced; from such an one Hübner will not appeal in vain to our future understanding.

Channing writes of Thoreau, the thorough Naturalist: "His docility was great, and as the newest botanies changed the name of Andromeda to Cassandra, he accepted it, and became an accomplice to this tragic deed." Thoreau, then, did not, as some professed Naturalists, advertise his grievances in this respect. Elsewhere Thoreau writes: "With the knowledge of the name comes a distincter knowledge of the thing."

Our only hitherto published list of the Noctuidae is contained in the Catalogue issued by the Smithsonian Institution in May, 1860. This was compiled by Dr. Jno. G. Morris, and I only hope I have brought to my work a tithe of the enthusiasm and industry displayed by my respected friend, to whom I dedicate the present List.

For donations of material, or for personal kindness and courtesy, I am under obligations to Professor Zeller of Stettin, to Prof. A. S. Packard, Jr., of Salem, to Mr. J. Behrens of San Francisco, to Mr. J. A. Lintner of the State Museum, Albany, to Mr. O. Meske of Albany, to Mr. H. K. Morrison of Old Cambridge, to Prof. O. S. Westcott of the High School, Chicago, to Prof. C. V. Riley, State Entomologist of Missouri, to Mr. W. H. Stultz of Easton, Pa., to Mr. Chas. A. Blake, of Philadelphia, to Prof. S. H. Peabody of the Mass. Agricultural College, to Mr. Theo. L. Mead of New York, to Mr. E. L. Graef of Brooklyn, L. I., to Mr. Jas. Pettit of Grimsby, Ontario, to Mr. Wm. H. Saunders of London, Ontario, to Prof. Townend Glover of the Agricultural Department, Washington, to Mr. J. H. Oomstock, Cornell University, to M. F. X. Bélanger, Laval University, to Prof. F. H. Snow of the Kansas State University, and to Dr. Leon F. Harvey and Mr. Henry S. Sprague of Buffalo.

BOMBYCIAE, *Hübner* (1816).

{ Noctuo-bombycini *Boisd.* (p.), 1829. }
{ Cymatophoridae *Herr.-Sch.*, 1845. }

*BOMBYCIA, *Hübner* (Tentamen).

Type: Noctua Or *W. V.*

†**caniplaga** (*Walk.*), C. B. M., Noct. 18 (*Cymatophora*).
Canada.

†(?) **improvisa** (*Hy. Edw.*), Proc. Cal. Acad. Sci. 5, 189 (*Cymatophora*).
Cascades, W. T.

LEPTINA, *Guenée* (1852).

Type: Leptina dormitans *Guen.*

dormitans *Guen.*, Noct. 1, p. 15.
latebricola *Grote*, Proc. Ent. Soc. Phil. 2, p. 57 (spec. dist.?).
ophthalmica *Guen.*, Noct. 1, p. 15, Pl. 3, fig. 6.
Doubledayi *Guen.*, Noct. 1, p. 15.
formosa *Grote*, Proc. Ent. Soc. Phil. 2, p. 323.
Canada to Alabama.

PSEUDOTHYATIRA, *Grote* (1864).

Type: Thyatira cymatophoroides *Guen.*

cymatophoroides (*Guen.*), Noct. 1, p. 13 ♂ (*Thyatira*); Grote, Proc. Ent. Soc. Phil., vol. 2, p. 58 ♂ ♀.
expultrix *Grote*, Proc. Ent. Soc. Phil. 2, p. 58 (*Lacinia* ‖), Pl. 2, fig. 6; *Th. cymatoph.*‡ ♀, Guen., Noct. 1, p. 14; Edw., Pr. Cal. Acad. Sci. 5, 189.
Canada to Virginia and British Columbia.

*HABROSYNE, *Hübner* (1816).

Type: Noctua derasa *Linn.*

scripta (*Gosse*), Can. Nat., p. 249; *Thyat. abrasa* Guen., Noct. 1, p., 12, Pl. 3, fig. 2; *Habr. scripta* Grote, Bul. Buf. Soc. Nat. Sci. vol. 1, p. 77; *derasa* ‡ Edw., Proc. Cal. Acad. Sci. 5, 189.
Canada to Virginia and Pacific Coast.

*THYATIRA, *Ochsenheimer* (1816).

Type: Noctua batis *Linn.*

pudens *Guen.*, Noct. 1, p. 13, Pl. 3, fig. 1.
Canada to Pennsylvania.

NOCTUAE, *Linn.* (1758).

[Noctuelitae *Latr.*, 1809.]

NONFASCIATAE *Borkhausen* (1792).

{ Noctuelidi *Boisd.*, 1829.
Trifidae *Guen.*, 1852.
Noctuinae *Packard*, 1867. }

DICOPIS, *Grote* (1874).

Type: Dicopis muralis *Grote*.

muralis *Grote*, 6th Ann. Rep. Peab. Acad. Sci. p. 27.
New York and Pennsylvania.

*RAPHIA, *Hübner* (1816).

Type: Raphia hybris *Hübner*.

abrupta *Grote*, Proc. Ent. Soc. Phil. vol. 2, p. 336, Pl. 8, fig. 3.
frater *Grote*, Proc. Ent. Soc. Phil. vol. 2, p. 435, Pl. 9, fig. 7; *Saligena personata* Walker, Suppl. p. 606.
Massachusetts to Pennsylvania.

CHARADRA, *Walker* (1865).

Type: Charadra contigua *Walker*.

deridens (*Guen.*), (*Diphtera*) Noct. 1, p. 35, Pl. 3, fig. 8; *Acronycta circulifera* Walker, p. 709; *Charadra contigua* Walk., Suppl. p. 446; *Ch. deridens* G. & R., Trans. Am. Ent. Soc. vol. 2, p. 86.
propinquilinea *Grote*, Trans. Am. Ent. Soc. vol. 4, p. 293, Pl. 1, fig. 96.
Massachusetts to Florida.

HARRISIMEMNA, *Grote* (1873).

Type: Notodonta sexguttata *Harris*.

sexguttata (*Harris*), Ent. Cor. pp. 174–175, figs. 24–25; *Grammophora trisignata* Walk., C. B. M. Noct. p. 29; Grote, Trans. Am. Ent. Soc. 4, p. 293.
Massachusetts to Pennsylvania.

FERALIA, *Grote* (1874).

Type: Diphtera jocosa *Guen.*

jocosa (*Guen.*), Noct. 1, p. 37; Grote, List (1).
Comstocki *Grote*, List (2).
februalis *Grote*, List (3).
New York and California.

* **MOMA,** *Hübner* (1816).

Type : Noctua orion *Esper* (*aprilina* ‡ Hübn.).

fallax *Herr.-Sch.*, Exot. S. 80, fig. 211.
Atlantic District.

* **ACRONYCTA,** *Ochs.* (1816).

Type : Noctua leporina *Linn.*

vinnula *Grote*, Proc. Ent. Soc. Phil. 2, p. 436 (*Microcoelia*) Pl. 9, fig. 2 ; Trans. Am. Ent. Soc. 2 p. 118 (*Acronycta*).
grisea (*Barnston*) (*Noctua*) ; Walker, C. B. M. Noct. p. 56.
Tritona (*Hübner*), Zutr. 107–108 (*Triaena*) ; Guen., Noct. 1, p. 42 (*Acronycta*).
occidentalis *G. & R.*, Proc. Ent. Soc. Phil. vol. 6, p. 16.
† **telum** *Guen.*, Noct., p. 45.
morula *G. & R.*, Trans. Am. Ent. Soc. vol. 2, p. 196, Pl. 3, fig. 75.
Lobeliae *Guen.*, Noct. 1, p. 44.
furcifera *Guen.*, Noct. 1, p. 44.
hasta *Guen.*, Noct. 1, p. 45.
† **interrupta** *Boisd.;* Guen., Noct. 1. p. 46.
spinigera *Guen.*, Noct. 1, p. 45.
connecta *Grote*, Bul. Buf. Soc. Nat. Sci. vol. 1, p. 79.
funeralis *G. & R.*, Proc. Ent. Soc. Phil. vol. 6, p. 17, Pl. 4, fig. 10 ; *Acr. americana* ‡ Harris, Ent. Cor. p. 313, Pl. 3, fig. 3 (larva).
innotata *Guen.*, Noct. 1, p. 50 ; *Diphthera Graefii* Grote, Ent. Proc. Soc. Phil. vol. 2, p. 68, Pl. 3, fig. 6.
Lupini *Behr.*, Grote, Bul. Buf. Soc. Nat. Sci. vol. 1, p. 79.
lepusculina *Guen.*, Noct. 1, p. 46 ; *Acr. Populi* Riley, 2d Mo. Rep., p. 119.
insita *Walk.*, C. B. M. Noct. p. 61 (an spec. praec.?).
hastulifera (*Abb. & Sm.*) (*Phalaena*) 2, Pl. 92 ; *Apatela americana* Harris, Ins. Inj. Veg. p. 435 ; *Acr. hastulifera* Guen. Noct. 1, p. 47.
dactylina *Grote*, Proc. Bost. Soc. N. H., 1874, p. 239.
† **acericola** *Guen.*, Noct. 1, p. 48 ; *Phalaena aceris* Abb. & Sm. 2, Pl. 93.
rubricoma *Guen.*, Noct. 1, p. 49.
luteicoma *G. & R.*, Trans. Am. Ent. Soc. vol. 3, p. 179, Pl. 2, fig. 83.
† **brumosa** *Guen.*, Noct. 1, p. 52.
Verrilli *G. & R.*, Trans. Am. Ent. Soc., 3, p. 178, Pl. 2, fig. 82.
noctivaga *Grote*, Proc. Ent. Soc. Phil. 2, p. 437, Pl. 9, fig. 3.
superans *Guen.*, Noct. 1, p. 53.
afflicta *Grote*, Proc. Ent. Soc. Phil. 2, p. 438, Pl. 9, fig. 4 ; Trans. Am. Ent. Soc. 3, p. 179.
† **longa** *Guen.*, Noct. 1, p. 54.
clarescens *Guen.*, Noct. 1, p. 54.
ovata *Grote*, Bul. Buf. Soc. Nat. Sci. 1, p. 80, Pl. 2, fig. 14.
Hamamelis *Guen.*, Noct. 1, p. 52.

dissecta *G. & R.*, Trans. Am. Ent. Soc. 6, p. 178, Pl. 2, fig. 81.
albarufa *Grote*, Proc. Bost. Soc. N. Hist., 1874, p. 239.
sperata *Grote*, Bul. Buf. Soc. Nat. Sci. 1, p. 81, Pl. 2, fig. 1.
lithospila *Grote*, Proc. Bost. Soc. N. Hist., 1874, p. 240.
xyliniformis[3] *Guen.*, Noct. 3, p. 400; *Acr. xylinoides* Guen., Noct. 1, p. 56; Riley, 5th Mo. Report, p. 126 (larva).
oblinita (*Abb. & Sm.*), Ins. Ga. 2, p. 157, Pl. 94 (*Phalaena*); Guen. Noct. 1, p. 49 (*Acronycta*).
insolita *Grote*, Bul. Buf. Soc. Nat. Sci. 1, p. 82.
† **modica** *Walk.*, C. B. M. Noct. p. 56.
† **contacta** *Walk.*, C. B. M. Noct. p. 58.
† **declarata** *Walk.*, C. B. M. Noct. p. 61.
† **impressa** *Walk.*, C. B. M. Noct. p. 61.
† **fasciata** (*Barnston*), Walk., C. B. M. Noct. p. 62.
† **mixta** (*Barnston*), Walk., C. B. M. Noct. p. 62.
† **ulmi** *Harr.*, Ent. Cor. p. 312, Pl. 31, fig. 10 (*larva*).
† **pruni** *Harr.*, Ent. Cor. p. 313, Pl. 4, fig. 13 (*larva*).
† **salicis** *Harr.*, Ent. Cor. p. 314, fig. 44 (*larva*).

North temperate America.

*JASPIDEA, *Hübner* (Tentamen).

Type: Noctua spoliatricula *W. V.* (*algae* Fabr).

lepidula *Grote*, 6th Ann. Rep. Peab. Acad. Sci. p. 27.
palliatricula (*Guen.*), Noct. 1, p. 26 (*Bryophila*).
† **corticosa** (*Guen.*), Noct. 1, p. 30 (*Bryophila*).
teratophora (*Herr.-Sch.*), Exot. fig. 213; *Erastria inscripta* Walk. C. B. M. Noct. 808.
† **discitincta** (*Walk.*), C. B. M. Noct. p. 27 (*Bryophila*).
† **discivaria** (*Walk.*), C. B. M. Noct. p. 27 (*Bryophila*).
† **discinigra** (*Walk.*), C. B. M. Noct. p. 28 (*Bryophila*).
† **nana** (*Hübn.*), Zutr. 1, S. 14, figs. 53, 54 (*Cryphia*).

North temperate America.

LITHACODIA, *Hübner* (1816).

Type: Lithacodia bellicula *Hübn.*

bellicula *Hübn.*, Zutr. 1, figs. 85, 86.

Eastern and Middle States.

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[3] This name is changed by Guenée on account of Hyppa xylinoides. It is clear, however, that the latter name, being the latest, is the one to be corrected. However, I follow Guenée's precedent to avoid confusion.

POLYGRAMMATE, *Hübner* (1816).

Type: Polygrammate hebraeicum *Hübner*.

hebraicum *Hübn.*, Zutr. 1, S. 10, fig. 25, 26; *Grammophora hebraea* Guen., Noct. 1, p. 30.

Atlantic District.

MICROCOELIA, *Guen.* (1852).

Type: Microcoelia fragilis *Guen.*

fragilis *Guen.*, Noct. 1, p. 34.
diphteroides *Guen.*, Noct. 1, p. 34; Grote, Proc. Ent. Soc. Phil. vol. 3, p. 78, Pl. 2, fig. 2; G. & R., Trans. Am. Ent. Soc. 2, p. 195, Pl., 3, fig. 69; var. obliterata, *Grote*, Proc. Ent. Soc. Phil. 3, p. 79; G. & R., Trans. Am. Ent. Soc. 2, p. 195, Pl. 3, fig. 70.

Canada to Alabama.

*AGROTIS, *Hübner* (Tentamen).

Type: Noctua segetum *S. V.*

sigmoides (*Guen.*), Noct. 1, p. 325 (*Noctua*).
gilvipennis *Grote*, 6th Ann. Rep. Peab. Acad. Sci. p. 28.
* **augur** (*Fabr.*); Guen., Noct. 1, p. 325.
fumalis *Grote*, Bul. Buf. Soc. Nat. Sci. 1, 98.
mimallonis *Grote*, Bul. Buf. Soc. Nat. Sci. 1, 98.
phyllophora *Grote*, List (4).
* **triangulum** (*Hufnagel*); Walk. C. B. M. Noct. 391.
* **baja** (*S. V.*), S. 77.
badinodis *Grote*, Can. Ent. 6, 13.
* **c-nigrum** (*Linn.*); Guen., Noct. 1, 328.
bicarnea (*Guen.*), Noct. 1, 328 (*Noctua*).
† **spissa** *Guen.*, Noct. 1, 261.
auxiliaris *Grote*, Bul. Buf. Soc. Nat. Sci. 1, p. 96.
herilis *Grote*, Bul. Buf. S. N. S. 1, p. 99; *jaculifera* var. Guen., Noct. 1, p. 262.
tricosa *Lintn.*, 26th Ann. Rep. N. Y. State Mus. Nat. Hist. 1874, p. 159.
subgothica (*Haw.*); Steph. Lep. Haust. 2, 126, Pl. 22, fig. 3; *Agr. jaculifera* Guen., Noct. 1, p. 262, Pl. 5, fig. 4; *Agr. jaculifera* Riley, 1st Mo. Rep., Pl. 1, fig. 11.
sexatilis *Grote*, Bul. Buf. Soc. Nat. Sci. 1, p. 100.
* **plecta** (*Linn.*); Guen., Noct. 1, p. 326; *Chersotis plecta* Grote, Proc. Ent. Soc. Phil. 1, p. 218.
† **ochrogaster** (*Guen.*), Noct. 1, p. 327 (*Noctua*).
vittifrons *Grote*, Proc. Ent. Soc. Phil. 3 p. 527 (*Noctua*), Pl. 5, fig. 8; Trans. Am. Ent. Soc. 2, p. 309 (*Agrotis*).

* **fennica** (*Tauscher*); Guen., Noct. 1, p. 270 (California, *Behrens* No. 13).
* **lycarum** *Ev.*, H.-S., fig. 146–147 (California, *Edwards* No. 1392 and *Behrens* No. 31).
balanitis *Grote*, Bul. Buf. Soc. Nat. Sci. 1, p. 97, Pl. 3, fig. 14.
4-dentata *G. & R.*, Proc. Ent. Soc. Phil. 4, p. 491, Pl. 3, figs. 2–3.
cicatricosa *G. & R.*, Proc. Ent. Soc. Phil. 4, p. 492, Pl. 3, fig. 4.
pitychrous *Grote*, Bul. Buf. Soc. Nat. Sci. 1, p. 82, Pl. 2, fig. 11.
tessellata *Harris*, Rep. Ins. Inj. Veg. p. 445, fig. 221.
collaris *G. & R.*, Trans. Am. Ent. Soc. 1, p. 348, Pl. 7, fig. 54.
formalis *Grote*, List (5).
geniculata *G. & R.*, Trans. Ent. Soc. 1, p. 349, Pl. 7, fig. 54.
* **conflua** (*Treits.*); Grote, 6th Ann. Rep. Peab. Acad. Sci. p. 29.
scandens *Riley*, 1st Rep. Mo. p. 76, Pl. 1, figs. 5 to 7.
muraenula *G. & R.*, Trans. Am. Ent. Soc. 1, p. 352, Pl. 7, fig. 48.
violaris *G. & R.*, Trans. Am. Ent. Soc. 1, p. 353, Pl. 7, fig. 59.
atrifrons *Grote*, Bul. Buf. Soc. Nat. Sci. 1, p. 97.
Wilsoni *Grote*, Bul. Buf. Soc. Nat. Sci. 1, p. 135, Pl. 4, fig. 3; List (6).
specialis *Grote*, List (7).
lubricans (*Guen.*), Noct. 1, p. 323 (*Noctua*), Pl. 5, fig. 7.
clandestina (*Harris*), Ins. Ing. Veg. (*Noctua*), p. 448; (*Agrotis*) Grote, Trans. Am. Ent. Soc. 2, p. 309.
brunneicollis *Grote*, Proc. Ent. Soc. Phil. 3, p. 524, Pl. 5, fig. 5 (*Noctua*); Grote, Trans. Am. Ent. Soc. 2, p. 309 (*Agrotis*).
alternata[4] *Grote*, Proc. Ent. Soc. Phil. 3, p. 526, Pl. 5, fig. 8 (*Noctua*); Trans. Am. Ent. Soc. 2, p. 309 (*Agrotis*).
cupida *Grote*, Proc. Ent. Soc. Phil. 3, p. 525, Pl. 5, fig. 7 (*Noctua*); Trans. Am. Ent. Soc. 2, p. 309 (*Agrotis*).
*† **rava** *Herr.-Sch.*, fig. 544; Mösch., W. E. M. 4, S. 367.
† **imperita** (*Hübn.*), Zutr. S. 224, figs. 447–8 (*Ogygia*); ? *Agr. comparata* Mösch., W. E. M. 6, S. 131, Taf. 1, fig. 5.
† **dissona** *Möschler*, W. E. M. 4, S. 365, Taf. 9, fig. 4.
† **littoralis** *Packard*, Proc. Bost. Soc. N. H. vol. 11, p. 36.
† **umbratus** *Packard*, Proc. Bost. Soc. N. H. vol. 11, p. 37.
† **Okakensis** *Packard*, Proc. Bost. Soc. N. H. vol. 11, p. 38.
† **Wockei** *Möschler*, W. E. M. 6, S. 130, Taf. 1, fig. 2.
† **septentrionalis** *Möschler*, W. E. M. 6, S. 133, Taf. 1, fig. 3.
† **speciosa** (*Hübn.*); Mösch., W. E. M. 8, S. 196.

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[4] This species seems subject to considerable variation in the extent of the dark shadings of primaries and their ground tint. I have received what is apparently a form of A. alternata from California. Both this and the following species have been erroneously referred by me to *Cerastis*, Can. Ent. 6, p. 16.

† **fusca** *Boisd.*; Mösch., W. E. M. 8, S. 197.
† **Staudingeri** *Mösch.*, W. E. M. S. 132, Taf. 1, fig. 4.
*† **islandica** *Staudgr.*, Stett. Ent. Zeit. 1857, SS. 232, 301.
† **Drewseni** *Staudgr.*, Stett. Ent. Zeit. 1857, S. 302.
† **Westermanni** (*Staudgr.*), Stett. Ent. Zeit. 1857, S. 303 (*Noctua*).
† **Cochrani** *Riley*, Prairie Farmer, July, 1868 (fide Auct.); 1st Mo. Rep. 75.
repentis *G. & R.*, Trans. Am. Ent. Soc. 1, p. 350, Pl. 7, fig. 58.
* **saucia** (*Hübn.*); Guen., Noct. 1, p. 271; *Ag. inermis* Harris, Ins. Inj. Veg. p. 444.
† **malefida** *Guen.*, Noct. 1, p. 267.
* **exclamationis** (*Linn.*); Guen. Noct. 1, p. 280.
* **segetum** (*S. V.*); *Agr. texanus* Grote, Proc. Ent. Soc. Phil., vol. 2, p. 273, Pl. 6, fig. 2.
velleripennis *Grote*, 6th Ann. Rep. Peab. Acad. Sci. p. 29.
† **messoria** *Harris*, Ins. Inj. Veg. p. 444.
annexa (*Tr.*); Stephens, Haust. 2, p. 117, Pl. 22, fig., 2.
Vancouverensis *Grote*, Bul. Buf. Soc. Nat. Sci. 1, p. 134, Pl. 4, fig. 4.
† **incivis** *Guen.*, Noct. 1, 274, 441.
† **obeliscoides** *Guen.*, Noct. 1, p. 293.
† **elimata** *Guen.*, Noct. 1, p. 333 (*Noctua*).
* **suffusa** (*S. V.*), Guen., Noct. 1, p. 268; *Agr. telifera* Harris, Ins. Ing. Veg. p. 443.
venerabilis *Walk.*, C. B. M. Noct. 328; *incallida* (♀) Walk., C. B. M. Noct. p. 330.
† **patula** *Walk.*, C. B. M., Noct. p. 329.
† **haesitans** *Walk.*, C. B. M., Noct. p. 329.
† **insignata** *Walk.*, C. B. M. Noct. p. 330.
† **mollis** *Barnston*, Walk., C. B. M. Noct. p. 331.
† **perlentans** *Walk.*, C. B. M. Noct. p. 332.
† **radix** *Barnston*, Walk., C. B. M. Noct. p. 332.
† **jucunda** (*Walk.*), (*Graphiphora*) C. B. M. Noct. p. 399.[5]

Widely distributed in North America.

PLEONECTOPODA, *Grote* (1873).

Type: Pleonectopoda Lewisi *Grote.*

Lewisi *Grote*, Bul. Buf. Soc. Nat. Sci. 1, p. 137, Pl. 4, fig. 10.

Colorado.

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[5] At this time many of the species of this genus that I have formerly examined are inaccessible to me. The species should be separated into 2 Groups: i. e. 1, those species in which all the tibiae are spinose, and 2, those in which the middle and hind tibiae alone are armed. The present arrangement is provisional.

ADITA, *Grote* (1874).

Type: Phalaena Chionanthi *Abb. & Sm.*

Chionanthi (*Abb & Sm.*), 2, Pl. 98; Grote, List (8).

New York, Georgia.

*EUROIS, *Hübner* (1816).

Type: Eurois occulta *Hübner.*

***occulta** *Hübner;* Grote, Can. Ent. 6, p. 13; *Hadena implicata* Lef., Ann. Soc. Ent. Fr. 5, p. 394, Pl. 10, fig. 4.

herbacea (*Guen.*), Noct. 2, p. 73 (*Polyphaenis*).

Labrador to Middle States.

*AMMOCONIA, *Led.* (1857).

Type: Noctua caecimacula *S. V.*

badicollis *Grote,* Bul. Buf. Soc. Nat. Sci. 1, p. 136, Pl. 4, fig. 18.

Middle States.

*MAMESTRA, *Ochsenheimer* (1816).

Type: Noctua pisi *Linn.*

purpurissata *Grote,* Proc. Ent. Soc. Phil. 3, p. 82, Pl. 1, fig. 5 (*Eurois*); Bul. Buf. Soc. Nat. Sci. 1, p. 102 (*Mamestra*).

nimbosa (*Guen.*), Noct. 2, p. 77 (*Aplecta*); Grote, Bul. Buf. Soc. Nat. Sci. 1, p. 102 (*Mamestra*).

imbrifera (*Guen.*), Noct. 2, p. 76 (*Aplecta*); Grote, l. c., p. 103 (*Mamestra*).

latex (*Guen.*), Noct. 2, p. 78 (*Aplecta*); Grote, l. c., p. 103 (*Mamestra*); *Apamea demissa* Walk. C. B. M. Noct. 728.

condita (*Guen.*), Noct. 2, p. 78 (*Aplecta*), Pl. 8, fig. 5.

cuneata *Grote,* Bul. Buf. Soc. Nat. Sci. 1, p. 139, Pl. 4, fig. 9.

***grandis** (*Boisd.*), Gen. 950 (*Hadena*); Led. Noct. 90 (*Mamestra*).

subjuncta (*G. & R.*), Trans. Am. Ent. Soc. 2, p. 198, Pl. 3, fig. 71 (*Hadena*); Grote, Bul. Buf. Nat. Sci. 1, p. 282 (*Mamestra*).

atlantica *Grote*; *W-latinum* ‡ Guen. Noct. 2, p. 105.

Farnhami *Grote,* Bull. Buff. Soc. Nat. Sci. 1, p. 103, Pl. 3, fig. 2.

***brassicae** (*Linn.*); Grote, Bul. Buf. Soc. Nat. Sci. 1, p. 103.

confusa (*Hübn.*), Zutr. 495–496 (*Auchmis*).

chartaria *Grote,* Bul. Buf. Soc. Nat. Sci. 1, p. 138, Pl. 4, fig. 12.

***chenopodii** (*S. V.*); Grote l. c., p. 104.

albifusa (*Walk.*), C. B. M. 753 (*Hadena*); Grote, l. c., p. 104 (*Mamestra*).

legitima *Grote,* Proc. Ent. Soc. Phil. 3, p. 82, Pl. 2, fig. 4 (*Apamea*); Proc. Bost. Soc. Nat. Hist. 16, p. 241 (*Mamestra*).

claviplena[6] *Grote*, Bul. Buf. Soc. Nat. Sci. 1, p. 194.
niveiguttata *Grote*, l. c., p. 140, Pl. 4, fig. 16.
puerilis *Grote*, List (9).
lorea (*Guen.*), Noct. 1, p. 126 (*Hydroecia*).
cinnabarina *Grote*, Proc. Bost. Soc. Nat. Hist. p. 241 (1874).
laudabilis (*Guen.*), Noct. 2, p. 30 (*Hecatera*) Pl. 8, fig. 4; Grote, Proc. Bost. Soc. N. Hist. 16, p. 241 (*Mamestra*); *Hapalia indicans* Walk., 359.
4-lineata[7] *Grote*, Bul. Buf. Soc. Nat. Sci. 1, p. 140, Pl. 4, fig. 15.

Widely distributed in North America.

*DIANTHOECIA, *Boisd.* (1834).

Type: Noctua carpophaga *Borkh.*

leucogramma *Grote*, Bul. Buf. Soc. Nat. Sci. 1, p. 140; Grote, List (10).
capsularis *Guen.*, Noct. 2, p. 22, Pl. 8, fig. 3; *Raphia propulsa* Walk. C. B. M. Noct. 529.
† **phoca** *Mösch.*, W. E. M. 8, S. 197, Taf. 5, fig. 15.
† **subdita** *Mösch.*, W. E. M. 4, S. 363, Taf. 9, fig. 7.
meditata *Grote*, Bul. Buf. Soc. Nat. Sci. 1, p. 104.
rufula *Grote*, List (11).
insolens *Grote*, List (12).

Labrador, Eastern States, California.

*ONCOCNEMIS, *Led.* (1857).

Type: Agrotis confusa *Ev.* (non *Tr.*)

Behrensi *Grote*, List (13).
Dayi *Grote*, Bul. Buf. Soc. Nat. Sci. 1, p. 105, Pl. 3, fig. 8.
Hayesi *Grote*, Bul. Buf. Soc. Nat. Sci. 1, p. 106, Pl. 3, fig. 13.
Glennyi *Grote*, Bul. Buf. Soc. Nat. Sci. 1, p. 141, Pl. 4, fig. 17.
Chandleri *Grote*, Bul. Buf. Soc. Nat. Sci. 1, p. 107, Pl. 3, fig. 9.

California, Colorado Territory.

EUCOPTOCNEMIS, *Grote* (1874).

Type: Helioph. fimbriaris *Guen.*

† **fimbriaris** (*Guen.*), Noct. 1, p. 172 (*Heliophobus*).

Am. Sept.

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[6] In this species there is usually a reddish or yellowish dusting on the primaries on the sub basal space and about the median spots not noticed in my original description.

[7] "Santa Clara," No. 26, Mr. Behrens. A number of specimens received. This species is smaller than *laudabilis*, wanting all green color, and differs by the dash at internal angle of primaries, the dark median lines, and by the course of the t. a. line which is not waved, but runs more straightly outwardly obliquely to below the cell, widening the extra basal space. In one specimen the usually pale basal spaces are powdered with blackish.

COPIPANOLIS, *Grote* (1874.)

Type: Copipanolis cubilis *Grote.*

cubilis *Grote,* 6th Ann. Rep. Peab. Acad. Sci. p. 30.
Michigan and New England.

*POLIA, *Hübner* (Tentamen).

Type: Noctua flavicincta *S. V.*

leucoscelis *Grote,* 6th Ann. Rep. Peab. Acad. Sci. p. 30.
Wisconsin.

PACHYPOLIA, *Grote* (1874).

Type: Pachypolia atricornis *Grote.*

atricornis *Grote,* 6th Ann. Rep. Peab. Acad. Sci. p. 30.
Wisconsin.

*VALERIA, *Germar* (1821).

Type: Noctua oleagina *S. V.*

Grotei *Morrison,* Bul. Buf. Soc. Nat. Sci. 1, p. 274.
Eastern States.

*LAMPROSTICTA, *Hübner* (1816).

Type: Noctua culta *S. V.*

†**cora** (*Hübn.*), Zutr. 1, 14 (*Cerma*), figs. 59–60; *Chariptera festa* Guen., Noct. 2, p. 57, Pl. 7, fig. 5.
Southern States.

HOMOHADENA,[8] *Grote* (1873).

Type: Hadena badistriga *Grote.*

badistriga *Grote,* Bul. Buf. Soc. Nat. Sci. 1, p. 181.
Canada, New York.

CHYTONIX, *Grote* (1874).

Type: Apamea iaspis *Guen.*

iaspis (*Guen.*), Noct. 1, 209; Grote, List (14).
New York.

*HADENA, *Schrank* (in sensu *Led.*).

Bridghami (*G. & R.*), Proc. Ent. Soc. Phil. 6, p. 11, Pl. 3, fig. 1 (*Mamestra*).

* **arctica** *Boisd.*, Gen. 947; *Mamestra amica* ‡ Harris; Grote, Proc. Bost. Soc. Nat. Hist. 16, 241.

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[8] The vestiture of the thorax consists of flattened, mixed with hair-like scales; this character allies Homohadena and Chytonix with Lamprosticta.

devastator (*Brace*), (*Phalaena*); *? Mamestra passer* Guen., Noct. 1, p. 195; *Mamestra ordinaria* Walk., Noct. p. 232; *? Mamestra unicolor* Walk., Noct. 233; *? Mam. contenta* Walk., Noct. 233; Grote, Bul. Buf. Soc. Nat. Sci. 1, p. 108 (*Hadena*).

impulsa (*Guen.*), Noct. 1, p. 194 (*Mamestra*); (*Hadena*) Grote, Bul. Buf. Soc. Nat. Sci. 1, p. 108.

adjuncta (*Boisd.*), (*Miselia*); Guen., Noct. 1, p. 199, Pl. 6, fig. 10 (*Mamestra*); Grote, Bul. Buf. Soc. Nat. Sci. 1, p. 108 (*Hadena*).

apamiformis (*Guen.*), Noct. 1, p. 137 (*Xylophasia*); Grote, Bul. Buf. Soc. Nat. Sci. 1, p. 109 (*Hadena*).

* **rurea** (*Fabr.*), (*Noctua*); Guen., Noct. 1, p. 138 (*Xylophasia*).

† **insulsa** *Walk.*, C. B. M. Noct. 234 (*Mamestra*).

sputator *Grote*, Bul. Buf. Soc. Nat. Sci. 1, p. 190; *Apamea? insignata* ‖ Walk., C. B. M., p. 729.

dubitans *Walk.*, C. B. M., p. 232 (*Mamestra*); Grote, l. c., p. 108 (*Hadena*).

genialis *Grote*, List (15).

lignicolora (*Guen.*), Noct. 1, p. 140 (*Xylophasia*); Grote, Bul. Buf. Soc. Nat. Sci. 1, p. 109 (*Hadena*).

auranticolor *Grote*, Bul. Buf. Soc. Nat. Sci. 1, p. 109.

verbascoides (*Guen.*), Noct. 1, p. 141 (*Xylophasia*); Grote, Bul. Buf. Soc. Nat. Sci. 1, p. 109 (*Hadena*).

sectilis (*Guen.*), Noct. 1. p. 141 (*Xylophasia*); Grote, Bul. Buf. Soc. Nat. Sci. 1, p. 109 (*Hadena*).

cariosa (*Guen.*), Noct. 1, p. 144 (*Xylophasia*); Grote, Can. Ent. 6, p. 15 (*Hadena*).

finitima (*Guen.*), Noct. 1, p. 206 (*Apamea*).

† **mactata** (*Guen.*), Noct. 1, p. 207 (*Apamea*).

modica (*Guen.*), Noct. 1, p. 207 (*Apamea*); *Celaena subcedens* Walk., 264.

† **remissa** (*Hübn.*), 423; Guen., Noct. 1, p. 208 (*Apamea*); *??* Walk., p. 729.

turbulenta (*Hübn.*), Zutr. figs. 67–68 (*Phosphila*); Grote, Bul. Buf. Soc. Nat. Sci. 1, p. 180 (*Hadena*).

*† **exulis** *Lefb.*, Ann. Soc. Ent. Fr. 5, p. 393, Pl. 10, fig. 2; *groenlandica* Lefb., Ann. Soc. Ent. Fr.; H.-S., fig. 151; *gelata* Lefb., Ann. Soc. Ent. Fr. 5, 393, Pl. 10, fig. 3; *Neuria cervina* H.-S.; *Crymodes poli* Guen., Noct. 1, p. 187; *Crymodes gelida* Guen., Noct. 1, p. 186; *Crymodes borea* Guen., Noct. 1, p. 186; *Had. marmorata* Zett., Ins. Lap. 397.

† **Sommeri** *Lefb.*, Ann. Soc. Ent. Fr. 5, p. 391, Pl. 10, fig. 1.

† **exornata** *Möschl.*, W. E. M. 4, S. 364, Taf. 9, fig. 5.

marina *Grote*, List (16).

miselioides *Guen.*, Noct. 2, p. 82; H.-S., Ex. fig. 212.

fractilinea *Grote*, Can. Ent. 6, p. 15.

distincta (*Hübn*); G. & R., Trans. Am. Ent. Soc. 2, p. 197, Pl. 3, fig. 72.

† **indocilis** (*Walk.*), C. B. M. Noct. 178 (*Xylophasia*).
† **libera** (*Walk.*), C. B. M. Noct. 178 (*Xylophasia*).
† **arcuata** (*Walk.*), C. B. M. Noct. 718 (*Xylophasia*).
† **vincta** (*Walk.*), C. B. M. Noct. 730 (*Miana*).
† **irresoluta** (*Walk.*), C. B. M. Noct. 731 (*Celaena ?*).
† **festivoides** (*Guen.*), Noct. 1, p. 220 (*Celaena*).
chalcedonia (*Hübn.*), 404; *Guen.* Noct. 1, p. 221 (*Celaena*).
† **arna** (*Guen.*), Noct. 1, p. 222 (*Celaena*).
† **exesa** (*Guen.*), Noct. 1, p. 222 (*Celaena*).
renigera (*Steph.*), 2, p. 16 (*Celaena*); *Cel. herbimacula* Guen. Noct. 1, p. 223.
† **intracta** *Walk.*, C. B. M. p. 884.
† **punctifera** (*Walk.*), C. B. M. p. 263 (*Celaena*).
† **infecta** (*Walk.*), C. B. M. p. 263 (*Celaena*).
† **egens** (*Walk.*), C. B. M. p. 263 (*Celaena*).
† **erecta** (*Walk.*), C. B. M., p. 264 (*Celaena*).
Labrador to Southern States and California.

PERIGEA, *Guenée* (1852).

Type: Perigea xanthioides *Guen.*

xanthioides *Guen.* Noct. 1, p. 227.
† **infelix** *Guen.*, Noct. 1, p. 229.
Middle and Southern States.

* DIPTERYGIA, *Stephens* (1829).

Type: Noctua pinastri, *Linn.*

* **pinastri** (*Linn.*); Grote, Proc. Ent. Soc. Phil. 1, p. 218.
Atlantic States.

* HYPPA, *Duponchel* (1844).

Type: Noctua rectilinea *Esper.*

xylinoides *Guen.*, Noct. 2, p. 106, Pl. 8, fig. 11; *Xylina contraria* Walk. C. B. M. Noct. p. 627.
Eastern and Middle States.

* ACTINOTIA, *Hübner* (1816).

Type: Noctua perspicillaris *Linn.*

ramosula (*Guen.*), Noct. 2, p. 114, Pl. 9, fig. 1 (*Cloantha*); Grote, Bul. Buf. Soc. Nat. Sci, 1, p. 83, Pl. 2, fig. 16.
evicta *Grote*, Bul. Buf. Soc. Nat. Sci. 1, p. 84 (*Cloantha*), Pl. 2, fig. 18.
vomerina *Grote*, Bul. Buf. Soc. Nat. Sci. 1, p. 84 (*Cloantha*), Pl. 2, fig. 17.
Eastern and Middle States.

*CALLOPISTRIA, *Hübner* (1816).

Type: Noctua pteridis *Fabr.*

†**floridensis** (*Guen.*), Noct. 2, p. 192 (*Eriopus*); Walk., (*Callopistria*), C. B. M. Noct. p. 862.

mollissima (*Guen.*), Noct. 2, p. 294 (*Eriopus*); Walk., (*Callopistria*) C. B. M. Noct. p. 863; *Erastria rubicunda* Walk., l. c., 808.

monetifera (*Guen.*), Noct. 2, p. 295, Pl. 14, fig. 4 (*Eriopus*); Walk., (*Callopistria*) C. B. M. Noct. p. 863.

†**granitosa** (*Guen.*), Noct. 2, p. 295; Walk., C. B. M. Noct. p. 863 (*Callopistria*).

†**argentilinea** *Walk.*, C. B. M. Noçt. p. 863.

Middle and Southern States.

*PRODENIA, *Guenée* (1852).

Type: Neuria retina *Friv.*, H.-S.

Commelinae (*Abb. & Sm.*), Ins. Ga. 2, p. 189, Pl. 95 (*Phalaena*); Guen., Noct. 1, p. 162 (*Prodenia*).

ornithogalli *Guen.*, Noct. 1, p. 163.

Middle and Southern States.

EUPSEPHOPAECTES, *Grote* (1873).

Type: Eupsephopaectes procinctus *Grote.*

procinctus *Grote*, Bul. Buf. Soc. Nat. Sci. 1, p. 138, Pl. 4, fig. 6.

California.

CONSERVULA, *Grote* (1874).

Type: Phlogophora anodonta *Guenée.*

anodonta (*Guen.*), Noct. 2, p. 63, Pl. 7, fig. 8.

Middle States.

*TRIGONOPHORA, *Hübner* (1816).

Type: Trigonophora empyrea *Hübn.*

periculosa (*Guen.*), Noct. 2, p. 65 (*Phlogophora*).

Middle States.

*EUPLEXIA, *Stephens* (1829.)

Type: Noctua lucipara *Linn.*

***lucipara** (*Linn.*), Guen., Noct. 2, p. 68.

Canada, southward.

* BROTOLOMIA, *Led.* (1857).

Type: Noctua meticulosa *Linn.*

iris (*Guen.*), Noct. 2, p. 64; Grote, (*Brotolomia*) Bul. Buf. Soc. Nat. Sci. 1, p. 110.

Middle States.

NEPHELODES, *Guenée* (1852).

Type: Nephelodes minians *Guenée.*

minians *Guen.*, Noct. 1, p. 130; *Graphiphora expansa* Walk., C. B. M. Noct. p. 399.

violans *Guen.*, Noct. 1, p. 130.

Canada, southward.

* HELOTROPHA *Led.* (1857).

Type: Diataraxia fibrosa *Hübner.*

reniformis *Grote*, Can. Ent. 6. p. 14 (*Luperina*).

Canada to Middle States.

* NAENIA, *Stephens* (1829).

Type: Noctua typica *Linn.*

*† **typica** (*Linn.*); Walk., C. B. M. Noct. 1020; Bethune, Can. Ent. 1, 87.

Canada, United States.

* HYDROECIA, *Guenée* (1841).

Type: Noctua nictitans *Linn.*

nictitans (*Linn.*); Guen. Noct. 1, p. 126.

v. erythrostigma (*Haworth*).

sera *G. & R.*, Trans. Am. Ent. Soc. vol. 1, p. 345, Pl. 7, fig. 55.

inquaesita (*G. & R.*), Trans. Am. Ent. Soc. vol. 1, p. 344 (*Gortyna*).

† **salicarum** (*Barnston*), Walk. C. B. M. Noct. 717.

California, Canada, southward.

* GORTYNA, *Hübner* (1816).

Type: Noctua micacea *Esper.*

immanis (*Guen.*), Noct. 1, p. 128 (*Hydroecia*).

stramentosa (*Guen.*), Noct. 1, p. 129, Pl. 6, fig. 2 (*Hydroecia*).

limpida *Guen.*, Noct. 1, p. 124; *Gort. cerussata* Grote, Proc. Ent. Soc. Phil. 2, p. 431, Pl. 9, fig. 1.

rutila *Guen.*, Noct. 1, p. 123, Pl. 6, fig. 1.

† **marginidens** *Guen.*, Noct. 1, p. 123.

nebris *Guen.*, Noct. 1, p. 124.

nitela *Guen.*, Noct. 1, p. 124.

speciosissima *G. & R.*, Trans. Am. Ent. Soc. vol. 1, p. 342, Pl. 7, fig. 52.

cataphracta *Grote*, Proc. Ent. Soc. Phil. 3, p. 81, Pl. 2, fig. 3.

Canada, southward.

*OCHRIA, *Hübner* (1816).

Type: Noctua flavago *Linn.*

purpurifascia (*G. & R.*), Trans. Am. Ent. Soc. vol. 1, p. 341 (*Gortyna*), Pl. 7, fig. 51.

Eastern and Middle States, Calfornia.

*NONAGRIA, *Ochs.* (1816).

Type: Noctua typhae *Esper.*

† **inquinata** *Guen.*, Noct. 1, p. 104.

† **enervata** *Guen.*, Noct. 1, p. 105.

fodiens *Guen.*, Noct. 1, p. 105.

*† **typhae** (*Esper.*), Guen. Noct. 1, p. 109.

New York, southward.

ARZAMA, *Walker* (1865).

Type: Arzama densa *Walk.*

densa *Walk.*, C. B. M. Supp. p. 645.

obliquata *G. & R.*, Trans. Am. Ent. Soc. vol. 1, p. 339, Pl. 6, fig. 47.

vulnifica *Grote*, Trans. Am. Ent. Soc. vol. 4, p. 294.

Georgia and Middle States.

MACRONOCTUA, *Grote* (1874).

Type: Macronoctua onusta *Grote.*

onusta *Grote*, 6th Ann. Rep. Peab. Acad. Sci. p. 31.

Illinois.

ADMETOVIS, *Grote* (1873).

Type: Admetovis oxymorus *Grote.*

oxymorus *Grote*, Bul. Buf. Soc. Nat. Sci. 1, p. 133, Pl. 4, fig. 5.

California.

CIRRHOPHANUS, *Grote* (1872).

Type: Cirrhophanus triangulifer *Grote.*

triangulifer *Grote*, Can. Ent. 4, p. 187.

Missouri.

EUTHISANOTIA, *Hübner* (1816).

Type: Phalaena Timais *Cramer*.

Timais *Cramer*, 275 B.; *Philochrysa regnatrix Grote*, Proc. Ent. Soc. Phil. 2, pp. 340, 441.

Atlantic Coast.

SCOLECOCAMPA, *Guenee* (1852).

Type: Scolecocampa ligni *Guenée*.

liburna (*Geyer*), (*Clytie*) Zutr. 482, figs. 963, 964; *Scol. ligni* Guen., Noct. 1, p. 131, Pl. 6, fig. 3.

Middle and Southern States.

ACHATODES, *Guenee* (1852).

Type: Achatodes sandix *Guenee*.

zeae (*Harris*), Rep. Ins. Inj. Veg. p. 439, Pl. 7, fig. 9 (*Gortyna*); *Ach. sandix* Guen. Noct. 1, p. 132, Pl. 6, fig. 4; *Ach. zeae* Grote, Proc. Ent. Soc. Phil., 3, p. 540.

Eastern and Middle States.

PLATYSENTA, *Grote* (1874).

Type: Platysenta atriciliata *Grote*.

atriciliata *Grote*, 6th Ann. Rep. Peab. Acad. Sci. p. 32.

Middle States.

DORYODES, *Guenée* (1857).

Type: Ligia acutaria *H.-S.*

acutaria (*Herr.-Sch.*), Supp. S. 74, fig. 447; Guen., (*Doryodes*) Phal 2, p. 233, Pl. 17, fig. 6; Clemens Proc. Acad. Nat. Sci. Phil. 1860, p. 251.

† **spadaria** *Guen.*, Phal. 2, p. 234.

Eastern to Southern States.

* SENTA, *Stephens* (1834).

Type: Nonagria ulvae *Hübner*.

defecta *Grote*, 6th Ann. Rep. Peab. Acad. Sci. p. 33.

Eastern States.

OMMATOSTOLA, *Grote* (1873).

Type: Ommatostola Lintneri *Grote*.

Lintneri *Grote*, Bul. Buf. Soc. Nat. Sci. 1, p. 112.

Eastern and Middle States.

ABLEPHARON, *Grote* (1873).

Type: Leucania Henrici *Grote.*

Henrici *Grote,* Bul. Buf. Soc. Nat. Sci. 1, pp. 10, 112, Pl. 1, fig. 15.
evanidum *Grote,* Bul. Buf. Soc. Nat. Sci. 1, pp. 10, 112, Pl. 1, fig. 16.
fumosum *Morrison,* Bul. Buf. Soc. Nat. Sci. 1, p. 275.

Eastern and Middle States.

*HELIOPHILA, *Hübner* (Tentamen).

Type: Noctua pallens *Linn.*

***pallens** (*Linn.*); Guen., Noct. 1, p. 93 (*Leucania*).
phragmitidicola (*Guen.*), Noct. 1, p. 89 (*Leucania*).
Harveyi *Grote,* Bul. Buf. Soc. Nat. Sci. 1, p. 9, Pl. 1, fig. 14; *Leuc. albilinea* Guen. (nec. *Hübner*) Noct. 1, p. 89.
rubripennis (*G. & R.*), Trans. Am. Ent. Soc. vol. 3, p. 179, Pl. 2, fig. 77 (*Leuc.*).
commoides (*Guen.*), Noct. 1, p. 86 (*Leucania*).
†**scirpicola** (*Guen.*), Noct. 1, p. 84 (*Leucania*).
†**juncicola** (*Boisd.*); Guen., Noct. 1, p. 83 (*Leucania*).
†**linita** (*Guen.*), Noct. 1, p. 81 (*Leucania*).
†**insueta** (*Guen.*), Noct. 1, p. 81 (*Leucania*).
†**extincta** (*Guen.*), Noct. 1, p. 79 (*Leucania*).
†**videns** (*Guen.*), Noct. 1, p. 78 (*Leucania*).
unipuncta (*Haworth*); *Leuc. extranea* Guen., Noct. 1, p. 77.
pseudargyria (*Guen.*), Noct. 1, p. 74 (*Leucania*).
†**rufostrigata** (*Packard*), Proc. Bost. Soc. N. H. vol. 11, p. 36 (*Leucania*).
†**obusta** (*Guen.*), Noct. 1, p. 74 (*Leucania*).
†**ebriosa** (*Guen.*), Noct. 1, p. 74 (*Leucania*), Pl. 3, fig. 11.
†**diffusa** (*Walk.*), C. B. M., Noct. p. 94 (*Leucania*).
†**multilinea** (*Walk.*), C. B. M., Noct. p. 97 (*Leucania*).
†**contraria** (*Walk.*), C. B. M., Noct. p. 78 (*Mythimna*).
†**littera** (*Guen.*), Noct. 1, p. 71 (*Leucania*).
†**tripars** (*Walk.*), Noct. p. 78 (*Mythimna*).
†**vetusta** (*Walk.*), Noct. p. 78 (*Mythimna*).

Canada to California, and southward.

UFEUS, *Grote* (1873).

Type: Ufeus satyricus *Grote.*

satyricus *Grote,* Bul. Buf. Soc. Nat. Sci. 1, p. 101, Pl. 3, fig. 4.
plicatus *Grote,* Bul. Buf. Soc. Nat. Sci. 1, p. 102; Proc. Bost. Soc. N. H. 16, p. 241.

Canada to California.

ZOSTEROPODA, *Grote* (1874).

Type: Zosteropoda hirtipes *Grote.*

hirtipes *Grote*, List (17).

California.

MONODES, *Guenée* (1852).

Type: Monodes nucicolora *Guen.*

† **nucicolora** *Guen.*, Noct. 1, p. 241.

Florida.

* LAPHYGMA, *Guenée* (1852).

Type: Telmia exigua *Hübn.*

frugiperda (*Abb. & Sm.*), (*Phalaena*) vol. 2, Pl. 96; Geyer, 683, 684; Guen., Noct. 1, p. 159, (*Laphygma*); *Prodenia autumnalis*, Riley, 3d Mo. Rep. p. 116.

Canada, southward.

CARADRINA, *Ochsenheimer* (1816).

Type: Noctua respersa *S. V.*

† **tarda** *Guen.*, Noct. 1, p. 243.

miranda *Grote*, Bul. Buf. Soc. Nat. Sci. 1, p. 11.

grata *Hübn.*, Zutr. 71, 72 (*Elaphria*).

† **multifera** *Walk.*, C. B. M., Noct. 293; Bethune Can. Ent. 1, 85.

Canada, southward.

* PYROPHILA, *Hübner* (Tentamen).

Type: Noctua pyramidea *Linn.*

pyramidoides (*Guen.*), Noct. 2, p. 413; var. *inornata* Grote, Proc. Ent. Soc. Phil. 3, p. 86; aberr. *conspersa* Riley, 3d Mo. Rep. p. 75.

* **tragopoginis** (*Linn.*); *Agr. repressus* Grote, Can. Ent. 3, p. 162; l. c., Saunders, (*larva*) p. 193.

Canada, southward, and California.

CERAMICA, *Guenée* (1852).

Type: Ceramica exusta *Guen.*

picta (*Harris*), (*Mamestra*) Ins. Inj. Veg. p. 452; *Cer. exusta* Guen., Noct. 1, p. 344, Pl. 5, fig. 9.

† **vindemialis** *Guen.*, Noct. 1, p. 344.

† **w-album** *Guen.*, Noct. 1, p. 345.

Canada, southward

*TAENIOCAMPA, *Guenée* (1841).

Type: Noctua stabilis *W. V.*

alia *Guen.*, Noct. 1, p. 354.
† **hibisci** *Guen.* Noct. 1, p. 355 (desc. from Abbot's MS. figures).
oviduca *Guen.*, Noct. 1, p. 357.
† **styracis** *Guen.*, Noct. 1, p. 357 (described from Abbot's MS. figures).
†* **incerta** (*Hufn.*); *Oth instabilis* Fitch, Trans. N. Y., Agr. Soc. 16, 343.

Canada, southward.

*PACHNOBIA, *Guenée* (1852).

Type: Noctua rubricosa *W. V.*

cornuta *Grote*, List (18).
† **carnea** (*Thunb.*); Möschler, W. E. M. 4, p. 361.

Labrador, California.

ORTHODES, *Guenée* (1852).

Type: Orthodes infirma *Guen.*

infirma[9] *Guen.*, *Orth. infirma* A, Guen. Noct. 1, p. 375.
† **cynica** *Guen.*, Noct. 1, p. 375.
† **nimia** *Guen.*, Noct. 1, p. 376.
† **candens** *Guen.*, Noct. 1, p. 376.
† **vecors** *Guen.*, Noct. 1, p. 376.

New York, southward.

ZOTHECA, *Grote* (1874).

Type: Zotheca tranquilla *Grote.*

tranquilla *Grote*, List (19).

California.

ANOMIS, *Hübner* (1816).

Type: Anomis erosa *Hübn.*

erosa *Hübn.*, Zutr. S. 19, figs. 288, 287.
† **fulvida** *Guen.*, Noct. 2, p. 397 (an spec. praec. ?).

Southern States.

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[9] In this species the eyes are hairy. The lines on the fore wings are relieved by narrow yellowish or pale shades. All the markings distinct and carried out. Ordinary spots contiguous (in some specimens more so than in others); also circled by fine pale annulli. Median lines trapezoidal. The general color is dull rosy brown; squamation smooth. *Expanse* 32 m. m.

ALETIA, *Hübner* (1823).

Type: Aletia argillacea *Hübn.*

argillacea *Hübn.*, Zutr. (*Aletia*) 399, 400; *Noctua xylina* Say, Lec. Ed. 2, p. 370; *Anomis grandipuncta* Guen., Noct. 2, p. 400; *Anomis bipunctina* Guen. Noct. 2, p. 400; *Grote*, Bul. Buf. Soc. Nat. Sci. 1, pp. 122 and 170.

† **luridula** (*Guen.*), Noct. 2, p. 401 (*Anomis*).

Canada to Brazil.

EULEPIDOTIS, *Hübner* (1818).

Type: Eulepidotis alabastraria *Hübn.*

† **alabastraria** *Hübn.*, Zutr. 2, S. 22, figs. 311, 312.

Savannah.

PTERAETHOLIX *Grote* (1873).

Type: Pter. bullula *Grote.*

bullula *Grote*, Trans. Am. Ent. Soc., 4, p. 299.

Alabama.

MYTHIMNA, *Ochs.* (1816).

Type: Noctua acetosellae *W. V.*

† **culea** *Guen.*,[10] (*Mesogona*) Noct. 1, p. 404.

Florida.

*CALYMNIA, *Hübner* (1816).

Type: Noctua trapezina *Linn.*

orina (*Guen.*), (*Cosmia*) Noct. 2, p. 10; Grote, Can. Ent. 5, 205; Saunders, C. E. 5, 206 (larva).

Canada and Middle States.

*IPIMORPHA, *Hübner* (1816).

Type: Noctua subtusa *D. & S.*

pleonectusa *Grote*, Bul. Buf. Soc. Nat. Sci. 1, p. 191.

New York.

* ATETHMIA, *Hübner* (1816).

Type: Atethmia xerampelina *Hübner.*

pampina (*Guen.*), Noct. 1, p. 402, Pl. 7, fig. 2 (*Cirrhoedia*).

Canada, southward.

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[10] Guenée's remark p. 404: "dans les quelles los auteurs avaient d'abord classé le geure entier," is made of course without reference to Hübner, who had clearly circumscribed the genus in 1816.

CHOEPHORA *G. & R.* (1868).

Type: Choephora fungorum *G. & R.*

fungorum *G. & R.*, Trans. Am. Ent. Soc. 2, p. 200, Pl. 3, fig. 74.

New York, southward.

*CLEOCERIS *Boisd.* (teste *Led.*).

Type: Noctua viminalis *Fabr.*

†**onychina** (*Guen.*), Noct. 2, p. 48 (*Epunda*).

North America.

*ORTHOSIA *Ochs.* (1816).

Type: Noctua lota *Linn.*

viatica *Grote*, 6th Ann. Rep. Peab. Acad. Sci. p. 33.
decliva *Grote*, 6th Ann. Rep. Peab. Acad. Sci. p. 34.
inulta *Grote*, 6th Ann. Rep. Peab. Acad. Sci. p. 34.
apiata *Grote*, 6th Ann. Rep. Peab. Acad. Sci. p. 34.
†**insciens** *Walk.*, C. B. M., Noct. p. 746.

Canada, southward.

*XANTHIA, *Hübner* (Tentamen).

Type: Noctua fulvago *Linn.*

rufago *Hübn.*, Zutr. 61, 62 (*Jodia*); Guen., (*Xanthia*) Noct. 1, p. 392.
aurantiago *Guen.*, Noct. 1, p. 394, Pl. 7, fig. 1.
†**bicolorago** *Guen.*, Noct. 1, p. 397.
ferruginoides *Guen.*, Noct. 1, p. 398; *bicolorago* ‡ Walk., C. B. M. Noct. p. 464; G. & R., Trans. Am. Ent. Soc. 3, p. 78; *Xanthia spurcata* Walk., C. B. M., Noct., p. 749.
ralla *G. & R.*, Trans. Am. Ent. Soc. 1, p. 346, Pl. 7, fig. 49.
euroa *G. & R.*, Trans. Am. Ent. Soc. 4; *puta* (n. b. l.), G. & R. Trans. Am. Ent. Soc. 1, p. 347, Pl. 7, fig. 50.
***gilvago** (*W. V.*); Grote, Proc. Ent. Soc. Phil. 3, p. 95.
†***silago** (*Hübner*); Walk., C. B. M. Noct. 461.
†(?)**chloropha** (*Hübner*), Zutr. 1, No. 37, figs. 73, 74 (*Xestia*).

Canada, southward.

*GLAEA,[11] *Hübner* (Tentamen).

Type: Noctua vaccinii *Linn.*

* **anchocelioides** *Guen.*, Noct. 1, p. 384 (*Cerastis*).
Am. Sept.

*SCOPELOSOMA, *Curtis* (1840).

Type: Noctua satellitia *Linn.*

Graefiana *Grote*, List (20).
ceromatica *Grote*, List (21).
vinulenta *Grote*, Proc. Ent. Soc. Phil. 2, p. 440 (*Dichagramma*), Pl. 9, fig. 6; List (22).
Morrisoni *Grote*, List (23).
Walkeri *Grote*, Proc. Ent. Soc. Phil. 2, p. 439 (*Dichagramma*); Bul. Buf. Soc. Nat. Sci, 1, p. 192 (*Scopelosoma*); List (24).
sidus *Guen.*, Noct. 1, p. 386; Grote, List (25).
Canada to Texas.

*SCOLIOPTERYX, *Germar* (1821).

Type: Noctua libatrix *Linn.*

* **libatrix** (*Linn.*); Walk., C. B. M., Noct. p. 1011.
Canada to Texas.

*LITHOPHANE, *Hübner* (1816).

Type: Noctua petrificata *W. V.*

* **socia** (*Hufnagel*); *petrificata* W. V.; *Xyl. vulgaris* G. & R., Proc. Ent. Soc. Phil. 6, p. 18, Pl. 3, fig. 2; *Lithophane socia* Grote, 6th Ann. Rep. Peab. Acad. Sci. p. 36.
petulca *Grote*, 6th Ann. Rep. Peab. Acad. Sci. p. 35.
ferrealis *Grote*, 6th Ann. Rep. Peab. Acad. Sci. p. 36.
signosa (*Walk.*), C. B. M., Noct. 627 (*Xylina*); Grote, (*Lithophane*) 6th Ann. Rep. Peab. Acad. Sci. p. 37.
Bethunei (*G. & R.*), Trans. Am. Ent. Soc. 1, p. 354 (*Xylina*), Pl. 7, fig. 56; Grote, (*Lithophane*) 6th Ann. Rep. Peab. Acad. Sci. p. 37.
semiusta *Grote*, 6th Ann. Rep. Peab. Acad. Sci. p. 38.

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[11] Guenée's criticism of Stephens' use of this generic term is made without a knowledge of the Tantamen, and hence is valueless. Stephens' writings on the Noctuidae are worthy of the most careful study since, anterior to the German students, he has recognized many of the important generic characters in the family. Stephens does not, perhaps, need Westwood's apology (Journal of Entomology, Vol. 2, p. 118) for his treatment of this group of insects.

cinerea (*Riley*), 3d Mo. Rep. p. 35 (*Xylina*); Grote, (*Lithophane*) 6th Ann. Rep. Peab. Acad. Sci. p. 38.

laticinerea *Grote.*[12]

tepida *Grote.*[13]

querquera *Grote*, 6th Ann. Rep. Peab. Acad. Sci. p. 38.

† **multifaria** (*Walk.*), C. B. M., Noct. p. 628 (*Xylina*).

† **infructuosa** (*Walk.*), C. B. M., Noct. p. 627 (*Xylina*).

† **patefacta** (*Walk.*), C. B. M., Noct. p. 733 (*Xylina*).

pexata *Grote*, 6th Ann. Rep. Peab. Acad. Sci. p. 39.

Canada, southward.

ANYTUS, *Grote* (1873).

Type: Xylina sculpta *Grote.*

sculptus *Grote*, (*Xylina*) Bul. Buf. Soc. Nat. Sci. 1, p. 114, Pl. 3, fig. 1; l. c., p. 145 (*Anytus*).

capax (*G. & R.*), (*Xylina*) Trans. Am. Ent. Soc. 1, p. 355, Pl. 7, fig. 57; Grote, Bul. Buf. Soc. Nat. Sci. 1, p. 145 (*Anytus*).

Eastern and Middle States.

*CALOCAMPA, *Stephens* (1829).

Type: Axylia vetusta *Hübner.*

* **vetusta** (*Hübn.*), Noct. 459; Walk., C. B. M., Noct. p. 619.

* **solidaginis** (*Hübn.*), Noct. 256; Walk., C. B. M., Noct. p. 759.

Canada, southward.

*XYLOMIGES, *Guenée* (1852).

Type: Noctua conspicillaris *Linn.*

patalis *Grote*, Bul. Buf. Soc. Nat. Sci. 1, p. 144, Pl. 4, fig. 11.

hiemalis *Grote*, List (26).

curialis *Grote*, Bul. Buf. Soc. Nat. Sci. 1, p. 143.

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[12] Both sexes examined. Very much larger than *cinerea*, with broader wings, the t. p. line further from the reniform. Dead blackish cinereous, the orbicular paler, extending below the median vein, where it sometimes attains the reniform, constricted and marked on the vein; claviform obsolete. The markings are much as in *cinerea*, the color of the wings the same, the subterminal line is more obviously marked with blackish and the median lines further apart. Expanse, 44 to 46 m. m. New York, Wisconsin.

[13] Female examined. Allied to *cinerea*, but brighter colored and more distinctly marked. Fore wings frosted with whitish over blackish. Reniform red stained, with blackish interior line, larger and wider than in *cinerea*; orbicular black ringed, whitish, open to costa, *not* extending below median vein. Basal dash distinct, black, surmounted with a white shade. Claviform obvious; subterminal line preceded by blackish marks opposite the cell and again between veins 1 and 2. Hind wings dark fuscous with a warm tint; abdomen with ochery tinted lateral vestiture. Thorax whitish ashen. Expanse, 37 m. m. Mass., Mr. H. K. Morrison, No. 908.

† **mucens** (*Hübn.*), Zutr. 415, 416 (*Septis*); Herr.-Sch., Corr.-Bl., S. 74 (*Xylomiges*).

† **phytolaccae** (*Abb. & Sm.*), 2, p. 193, Pl. 97 (*Phalaena*).

California and Atlantic District.

* CUCULLIA, *Schrank* (1801).

Type: Noctua verbasci *Linn.*

convexipennis *G. & R.*, Trans. Am. Ent. Soc. 2, p. 201, Pl. 3, fig. 76.

asteroides *Guen.*, Noct. 2, p. 133.

postera *Guen.*, Noct. 2, p. 133.

Speyeri *Lintn.*, 26th Ann. Rep. N. Y. State Cab. p. 168.

intermedia *Speyer*, 23d Rep. N. Y. State Cab. pp. 217–222, Pl. 8, figs. 5–7; *umbratica* ‡ Guen. (nec. Linn.), Noct. 2, p. 147.

florea *Guen.*, Noct. 2, p. 134, Pl. 7, fig. 9.

serraticornis *Lintn.*, 26th Ann. Rep. N. Y. State Cab. p. 174.

(?) **Yosemitae** *Grote*, Bul. Buf. Soc. Nat. Sci. 1, pp. 113 and 145, Pl. 3, fig. 3.

Canada to California.

CRAMBODES, *Guenée* (1852).

Type: Crambodes talidiformis *Guen.*

talidiformis *Guen.*, Noct. 2, p. 152, Pl. 7, fig. 12.

Atlantic States.

ADIPSOPHANES, *Grote* (1873).

Type: Adipsophanes miscellus *Grote.*

miscellus *Grote*, Bul. Buf. Soc. Nat. Sci. 1, p. 181.

New York to California.

* EUTELIA, *Hübner* (1816).

Type: Eutelia adulatrix *Hübner.*

pulcherrima *Grote*, Proc. Ent. Soc. Phil. 4, p. 326 (*Ripogenus*).

Middle States.

MARASMALUS, *Grote* (1872).

Type: Marasmalus ventilator *Grote.*

ventilator *Grote*, Trans. Am. Ent. Soc. 4, p. 89.

histrio *Grote*, Trans. Am. Ent. Soc. 4, p. 297.

Massachusetts to Texas.

INGURA, *Guenée* (1852).

Type: Ingura abrostoloides *Guen.*

abrostoloides *Guen.*, Noct. 2, p. 311.
occulatrix *Guen.*, Noct. 2, p. 313.
delineata *Guen.*, Noct. 2, p. 311; *? Edema producta* Walk., C. B. M., 5, 1031.

*CALPE *Treitschke* (1825).

Type: Bombyx thalictri *Borkh.*

canadensis *Bethune*, Proc. Ent. Soc. Phil. 4, p. 213; *Plusiodonta? purpurascens Walk.*, C. B. M. 33, p. 842; *Oraesia sobria* Walk., l. c., p. 846.
Canada, southward.

SUDARIOPHORA, *Zeller* (1872).

Type: Phyprosopus callitrichoides *Grote.*

callitrichoides *Grote*, Trans. Am. Ent. Soc. 4, p. 90 (*Phyprosopus*); *Sudariophora nasutaria* Z. Ver. K. K. z.-b. G. S. 490, Taf. 2, fig. 11; *Sudariophora callitrichoides* Grote, Bul. Buf. Soc. Nat. Sci. 1, p. 170; *Doryodes acutalis* Walk.[14] (nec. Guen.), C. B. M., Delt. p. 73.
New York to Texas.

HYPSOROPHA, *Hübner* (1816).

Type: Noctua monilis *Fabr.*

monilis (*Fabr.*), 124 (*Noctua*); (*Hypsoropha*) Hübn., Zutr. 23, 24.
hormos *Hübn.*, Zutr. 14, fig. 27, 28; *Monogona hormos* Guen., 2, 403.
Southern States.

BASILODES, *Guenée* (1852).

Type: Basilodes pepita *Guen.*

pepita *Guen.*, Noct. 2, 358, Pl. 12, fig. 1.
Virginia, southward.

PLUSIODONTA, *Guenée* (1852).

Type: Plusiodonta compressipalpis *Guen.*

compressipalpis *Guen.*, Noct. 2, 359, Pl. 12, fig. 2.
New York, southward.

HEMICERAS, *Gnenée* (1852).

Type: Hemiceras cadmia *Guen.*

† **cadmia** *Guen.*. Noct. 2, 383, Pl. 13, fig. 2.
Am. Sept.

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[14] Consult *G. & R.*, Trans. Am. Ent. Soc. 2, p. 79, also *Zeller*, l. c., and *Packard*, Fifth Rep. Peab. Acad. p. 90.

LITOPROSOPUS, *Grote* (1869).

Type: Dyops futilis *G. & R.*

futilis (*G. & R.*), Trans. Am. Ent. Soc. 2, p. 202, fig. 73 (*Dyops*); Grote, Trans. Am. Ent. Soc. 2, p. 309 (*Litoprosopus*).

Florida.

*TELESILLA, *Herr.-Sch.* (1855).

Type: Trigonophora amethystina *Hübn.*

cinereola (*Guen.*), Noct. 2, p. 316 (*Placodes*), Pl. 15, fig. 1; H.-S., Exot. p. 68, fig. 215; *Telesilla cin.* Grote, Can. Ent. 6, 16.

Eastern to Southern States.

*ABROSTOLA, *Ochs.* (1816).

Type: Noctua urticae *Hübn.*

ovalis *Guen.*, Noct. 2, p. 322.

urentis *Guen.*, Noct. 2, p. 322, Pl. 11, fig. 11.

Eastern to Southern States.

*PLUSIA, *Fabr.* (teste *Led.*).

Type: Noctua chrysitis *Linn.* (*Hübn.* Tent.)

aerea (*Hübn.*), (*Agrapha*); Guen. Noct. 2, p. 333 (*Plusia*).
aereoides *Grote*, Proc. Ent. Soc. Phil. 3, p. 83, Pl. 2, fig. 5.
purpurigera (*Walk.*), (*Deva*) C. B. M., Noct. p. 1791.
balluca (*Geyer*), Zutr. 681, 682 (*Dyachrysia*); Guen. Noct. 2, p. 334 (*Plusia*).
***bractea** (*S. V.*), S. 314 (California, *Behrens*); Grote, List (27).
contexta *Grote*, Bul. Buf. Soc. Nat. Sci. 1, p. 193.
Putnami *Grote*, Bul. Buf. Soc. Nat. Sci. 1, pp. 146 and 192, Pl. 4, fig. 2.
striatella *Grote*, Bul. Buf. Soc. Nat. Sci. 1, p. 194.
thyatyroides *Guen.*, Noct. 2, p. 337, Pl. 11, fig. 8.
mappa *G. & R.*, Trans. Am. Ent. Soc. 2, p. 204.
bimaculata *Steph.*, 3, p. 104; *Pl. u-brevis*, Guen. 2, p. 341.
biloba *Steph.*, 3, p. 104; Guen. Noct. 2, p. 341, Pl. 11, fig. 10.
verruca (*Fabr.*), 238 (*Noctua*); Guen. 2, p. 342 (*Plusia*).
precationis *Guen.*, Noct. 2, p. 344.
simplex *Guen.*, Noct. 2, p. 346.
pasiphaeia *Grote*, Bul. Buf. Soc. Nat. Sci. 1, p. 146, Pl. 4, fig. 1 (Calif.).
†**ou** *Guen.*, Noct. 2, p. 348.
***gamma** (*Linn.*); Grote, Can. Ent. 6, p. 16.
***ni** (*Hübn.*), 284; Guen. Noct. 2, p. 349; *Pl. brassicae* Riley, 2d Mo. Rep. p. 111; Grote, Bul. Buf. Soc. Nat. Sci. 1, p. 147 (Calif.).

oxygramma (*Geyer*), Zutr. 769, 770 (*Autographa*); Guen. Noct. 2, p. 350 (*Plusia*).

† **parilis** (*Hübn.*); Mösch. W. E. M. 4, p. 371.

mortuorum *Guen.*, Noct. 2, p. 353.

8-scripta *Sanborn* MS.; *Grote*, List (28).

ampla *Walk.*, C. B. M. Noct. p. 910.

† **flagellum** *Walk.*, C. B. M. Noct. 909.

† **indigna** *Walk.*, C. B. M. Noct. 909.

viridisigma *Grote*, List (29).

† **u-aureum** *Boisd.*; Mösch., W. E. M. 4, p. 371.

† **quadriplaga** *Walk.*, C. B. M. p. 911.

† **selecta** *Walk.*, C. B. M. p. 912.

† **secedens** *Walk.*, C. B. M. p. 913.

† **falcigera** *Kirby*, F. B. Am. 4, 308.

† **rectangula** *Kirby*, F. B. Am. 4, 306.

† **diasema** (*Dalm.*); Staudgr. Stett. Ent. Zeit. 1857, S. 305.

alticola *Walk.*, C. B. M. Noct. p. 912; *Pl. ignea* Grote, Proc., Ent. Soc. Phil. 2, p. 274.[15]

†* **Hochenwarthi** *Hochenw.*; *divergens* (Fabr.), Mösch. W. E. M. 4, p. 370. Labrador, southward, westward to California.

* ANARTA, *Ochs.* (1816).

Type: Noctua myrtilli *Linn.*

†* **myrtilli** (*Linn.*); *Acadiensis* Bethune, Trans. Nov. Sco. Ins. 1868–9, p. 84.

* **cordigera** (*Thunb.*), M. N. U. Pars. 6, (*Noctua*) 1788; Mösch. W. E. M. 4, p. 367; *An. luteola G. & R.*, Proc. Ent. Soc. Phil. 4, p. 493, Pl. 3, figs. 5 and 6.

* **melanopa** (*Thunb.*), Ins. Suec. Pars. 2, p. 42 (*Noctua*); Mösch. W. E. M. 4, p. 367; *An. nigrolunata* Pack., Proc. Bost. Soc. N. H., 1866, p. 40; Grote, Proc. Bost. Soc. N. Hist. p. 244 (1874).

quadrilunata *Grote*, Proc. Bost. Soc. N. Hist. 16, p. 244.

* **amissa** *Lefebr.*, Ann. Soc. Ent. Fr. 5, p. 397, Pl. 10, fig. 6; Mösch. W. E. M. 4, p. 367.

Richardsoni (*Curtis*), App. Ross. Narr. 2d Voy. (*Hadena*); *An. algioda* Lefebr. Ann. Soc. Ent. Fr. 5, p. 395, Pl. 10, fig. 5; *Anarta Richardsoni*, Walk., C. B. M. Noct. p. 700; *An. algida*, Mösch. W. E. M. 4, p. 367.

subfuscula *Grote*, Proc. Bost. Soc. N. Hist. 16, p. 244.

† **impingens** *Walk.*, C. B. M. Noct. p. 700.

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[15] This species, from Colorado, appears on comparison distinct from the European *Hochenwarthi*, which latter is possibly erroneously determined from Labrador by Möschler.

‡ **septentrionis** *Walk.*, C. B. M. Noct. p. 700.
‡ **constricta** *Walk.*, C. B. M. Noct. p. 701.
‡ **rigida** *Walk.*, C. B. M. Noct. p. 701.
* **melaleuca** *Thunb.*, Ins. Suec. Pars. 2. *Noctua*, p. 42, fig. 12 (1791); *An. bicycla* Pack., Proc. Bost. Soc. N. H. 1866, p. 41.
* **Schönherri** *Zett.*; *Anarta leucocycla*, Stdgr. S. E. Z. 1857, S. 296; *Sympistis leuc.* Mösch. W. E. M. 4. 367. Taf. 9. fig. 6.
* **funesta** *Zett.*, Ins. Lap. p. 950; Mösch. W. E. M. 4, p. 370; *Anarta amissa* ‡ Lefb. Ann. Soc. Ent. Fr. 5. Pl. 10, fig. 7.
Labrador to Colorado Territory.

LEPIPOLYS, *Guenée* (1852).

Type: Lepipolys perscripta *Guen.*

perscripta *Guen.*, Noct. 2. p. 144, Pl. 7, fig. 10; Grote, Bul. Buf. Soc. Nat. Sci. 1, p. 147.
Southern States to California.

STIRIA, *Grote* (1874).

Type: Stiria rugifrons *Grote.*

rugifrons *Grote*, List (30).
Kansas, Colorado Territory.

STIBADIUM, *Grote* (1874).

Type: Stibadium spumosum *Grote.*

spumosum *Grote*, List (31).
Kansas.

PLAGIOMIMICUS, *Grote* (1873).

Type: Plagiomimicus pityochromus *Grote.*

pityochromus *Grote*, Bul. Buf. Soc. Nat. Sci. 1, p. 182.
Middle and Southern States.

SCHINIA, *Hübner* (1818).

Type: Schinia trifascia *Hübner.*

trifascia *Hübn.*, Zutr. 1, p. 11, figs. 33, 34.
rectifascia *Grote*, Proc. Bost. Soc. N. Hist. 16, p. 242.
† **gracilenta** *Hübn.*, Zutr. 1, p. 8, figs. 5, 6.
† **bifascia** *Hübn.*, Zutr. 1, p. 14, figs. 55, 56.
Middle and Southern States.

CHLORIDEA, *Westw.* (1841).

Type: Phalaena rhexiae *Abb. & Sm.*

rhexiae (*Abb. & Sm.*), Ins. Ga. 2, p. 199, Pl. 100; Guen., Noct. 2, p. 175 (*Aspila*).
† **subflexa** (*Guen.*), Noct. 2, p. 175 (*Aspila*).
Southern States.

ORIA *Guen.* (ex Geyer).

Type: Oria sanguinea *Geyer.*

sanguinea *Geyer*, Zutr. 4, p. 9, figs. 613, 614; Guen., Noct. 2, p. 167, Pl. 9, fig. 5.
Southern States and California.

ALARIA, *Westw.* (1841).

Type: Phalaena gaurae *Abb. & Sm.*

gaurae (*Abb. & Sm.*), Ins. Ga. 2, p. 197, Pl. 99; *Porphyrinia matutina* Hübn., Zutr. 3, 557, 558.
Southern States.

RHODOPHORA, *Guen.* (1852).

Type: Rhodophora florida *Guen.*

florida *Guen.*, Noct. 2, p. 171, Pl. 9, fig. 7.
Middle States and Nevada.

DERRIMA, *Walk.* (1856).

Type: Derrima stellata *Walk.*

stellata *Walk.*, C. B. M., Noct. p. 770; Grote, Trans. Am. Ent. Soc. 2, p. 114.
henrietta *Grote*, Proc. Ent. Soc. Phil. 3, p. 3, Pl. 2, fig. 1 (*Philomma*).
Eastern and Middle States.

LYGRANTHOECIA, *G. & R.* (1873).

Type: Crambus marginatus *Haworth.*

marginata (*Haw.*), 374; *Anthoecia rivulosa* Guen., Noct. 2, p. 184, Pl. 9, fig. 12; *Microphysa contracta* Walk., C. B. M., Noct. 836; *Anthophila divergens* Walk., 830; *Euclidia designata* Walk., 985.
saturata *Grote*, List. (32).
Thoreaui *G. & R.*, Trans. Am. Ent. Soc. 8, p. 181, Pl. 2, fig. 80 (*Anthoecia*).
Eastern to Southern States.

MELAPORPHYRIA, *Grote* (1874).

Type: Melaporphyria immortua *Grote.*

immortua *Grote*, List (33).
Eastern and Middle States.

EULEUCYPTERA. Grote 1865.

Type: Euleucyptera cumatilis *Grote.*

cumatilis Grote, Proc. Ent. Soc. Phil. 4, p. 330, Pl. 2, fig. 4.
Colorado.

TRICOPIS. Grote 1874.

Type: Tricopis chrysellus *Grote.*

chrysellus *Grote*, List 14.
Texas and Kansas.

HELIOLONCHE. Grote 1873.

Type: Heliolonche modicella *Grote.*

modicella *Grote*, Bul. Buf. Soc. Nat. Sci. 1, p. 115, Pl. 3, fig. 12.
California.

*MELICLEPTRIA. *Hübner* 1818.

Type: Melicleptria cardui *Hübn.*

mitis *Grote*, Bul. Buf. Soc. Nat. Sci. 1, p. 116, Pl. 3, fig. 7.
***tuberculum** *Hübn.*, Zutr. 3, figs. 517, 518.
bina (*Guen.*), Noct. 2, p. 186 (*Anthoecia*).
brevis *Grote*, Proc. Ent. Soc. Phil. 3, p. 530, Pl. 6, fig. 4 (*Anthoecia*).
atrites *Grote*, Bul. Buf. Soc. Nat. Sci. 1, p. 119.
arcifera (*Guen.*), Noct. 3, p. 399 (*Anthoecia*); Grote, Proc. Ent. Soc. Phil. 2, p. 340, Pl. 6, fig. 3.; *Anth. arcigera* Guen., l. c., p. 184.
Spraguei *Grote*, Proc. Ent. Soc. Phil. 2, p. 341, Pl. 6, figs. 4, 5 (*Anthoecia*).
lynx (*Guen.*), Noct. 2, p. 185 (*Anthoecia*); Grote, Proc. Ent. Soc. Phil. 2, p. 343, Pl. 6, fig. 6.
Packardi *Grote*, Proc. Ent. Soc. Phil. 3, p. 528, Pl. 6, fig. 2 (*Anthoecia*), **var.** nobilis *id.*, l. c., p. 529, Pl. 6, fig. 3.
mortua *Grote*, Proc. Ent. Soc. Phil. 3 p. 528, Pl. 6, fig. 1 (*Anthoecia*).
pauxilla *Grote*, Bul. Buf. Soc. Nat. Sci. 1, p. 118, Pl. 3, fig. 6.
diminutiva *Grote*, Bul. Buf. Soc. Nat. Sci. 1, p. 148.
persimilis *Grote*, Bul. Buf. Soc. Nat. Sci. 1, p. 117, Pl. 3, fig. 11.
sueta *Grote*, Bul. Buf. Soc. Nat. Sci. 1, p. 117, Pl. 3, fig. 10.
californiensis *Grote*; *Hel. Californicus*] Grote, Bul. Buf. Soc. Nat. Sci. 1, p. 149.
celeris *Grote*, Bul. Buf. Soc. Nat. Sci. 1, p. 148.
villosa *Grote*, Proc. Ent. Soc. Phil. 3, p. 531, Pl. 6, fig. 6 (*Melicleptria*).
pulchripennis *Grote*, Proc. Bost. Soc. N. Hist. 16, p. 241 (1874).

spinosae (*Guen.*), Noct. 2, p. 182, Pl. 9, fig. 10; *Anthoecia hirtella G. & R.*, Proc. Ent. Soc. Phil. 6, p. 19, Pl. 3, fig. 3.

prorupta *Grote*, Trans. Am. Ent. Soc. 4, p. 294.

Canada southward, and westward to California.

TAMILA, *Guenée* (1852).

Type: Noctua nundina *Drury*.

nundina (*Drury*), 1, 36, (*Noctua*), Pl. 18, fig. 5; *N. nigrirena* Haw. p. 266; Guen., Noct. 2, p. 176 (*Tamila*).

Meadi *Grote*, Bul. Buf. Soc. Nat. Sci. 1, p. 121, Pl. 3, fig. 5.

Middle States and Colorado.

*HELIOTHIS, *Hübner* (Tentamen.)

Type: Noctua dipsaci *S. V.*

citrinellus *G. & R.*, Trans. Am. Ent. Soc. 3, p. 180, Pl. 2, fig. 79.

phlogophagus *G. & R.*, Trans. Am. Ent. Soc. 1, 187 and vol. 3, p. 180; *Hel. umbrosus* ‡ Riley, Prairie Farmer (1867); *Hel. armigera* ‡ Amer. Nat. (an Hel. dipsacea ?).

*** armigera** *Hübn.*; *Hel. umbrosus* Grote, Proc. Ent. Soc. Phil. 1, p. 219; *Hel. armigera* Grote, Bul. Buf. Soc. Nat. Sci. 1, p. 122.

Canada to California and Southern States.

HELIOCHILUS, *Grote* (1865).

Type: Heliochilus paradoxus *Grote*.

paradoxus *Grote*, Proc. Ent. Soc. Phil. 4, p. 329, Pl. 3, figs. 4, 5.

Colorado and Southern States.

* PYRRHIA, *Hübner* (1816).

Type: Noctua rutilago *S. V.* (*umbra* Hufn.).

exprimens (*Walk.*), C. B. M. Noct. p. 687 (*Heliothis*).

Canada, southward.

AXENUS, *Grote* (1873).

Type: Axenus arvalis *Grote*.

arvalis *Grote*, Bul. Buf. Soc. Nat. Sci. 1, p. 152, Pl. 4, fig. 8.

California.

ANNAPHILA, *Grote* (1873).

Type: Annaphila diva *Grote*.

diva *Grote*, Bul. Buf. Soc. Nat. Sci. 1, p. 150, Pl. 4, fig. 14.

depicta *Grote*, Bul. Buf. Soc. Nat. Sci. 1, p. 150, Pl. 4, fig. 13.
danistica *Grote*, Bul. Buf. Soc. Nat. Sci. 1, p. 151, Pl. 4, fig. 7.
California.

* TARACHE, *Hübner* (1816).

Type: Tarache aprica *Hübn.*

aprica *Hübn.*, 371; var. biplaga *Guen.* Noct. 2, p. 218.
terminimaculata *Grote*, Bul. Buf. Soc. Nat. Sci. 1, p. 153.
flavipennis *Grote*, Bul. Buf. Soc. Nat. Sci. 1, p. 153.
delecta (*Walk.*), C. B. M. Noct. p. 799 (*Acontia*); *Acontia metallica* Grote, Proc. Ent. Soc. Phil. 4, p. 327, Pl. 2, fig. 7; (*Tarache*) G. & R. Trans. Am. Ent. Soc. 2, p. 78.
cretata *G. & R.*, Trans. Am. Ent. Soc. 3, p. 181, Pl. 2, fig. 78.
erastrioides (*Guen.*), Noct. 2, p. 218; (*Tarache*) G. & R., Trans. Am. Ent. Soc. 2, p. 78.
candefacta *Hübn.*, Zutr. 3, 587, 588; *Acontia debilis Walk.*, p. 786.
Canada southward and California.

* THALPOCHARES,[16] *Led.* (1857).

Type: Noctua purpurina *S. V.*

† **mundula** *Zeller*, V. z.-b. Gesell. S. 460, T. 2, fig. 4.
concinnimacula (*Guen.*), Noct. 2, p. 238, Pl. 10, fig. 10 (*Leptosia*).
Middle and Southern States.

GALGULA, *Guenée* (1852).

Type: Galgula hepara *Guen.*

‡ **hepara** *Guen.*, Noct. 2, p. 239, Pl. 10, fig. 11.
‡ **subpartita** *Guen.*, Noct. 3, 399; *Galg. partita* Noct. 2, p. 239.
Am Sept.

XANTHOPTERA, *Guen.* (1852).

Type: Xanthoptera nigrofimbria *Guen.*

nigrofimbria *Guen.*, Noct. 2, p. 241, Pl. 10, fig. 12.
[illegible] *Grote*, Trans. Am. Ent. Soc. 4, p. 295, Pl. 1, fig. 88.
[illegible] *Grote*, Trans. Am. Ent. Soc. 4, p. 294, Pl. 1, fig. 89.
semiflava *Guen.*, Noct. 2, p. 241.
semicrocea *Guen.*, Noct. 2, p. 241.
[illegible] *Grote*, Trans. Am. Ent. Soc. 4, p. 295.
Middle and Southern States.

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[16] [illegible] by Hübner in the Tentamen under the pre-occupied (?) name [illegible] type indicated above.

*EUSTROTIA,[17] *Hübner* (1816).

Type: Noctua unca *S. V.*

†**olivula** (*Güen.*), Noct. 2, p. 231 (*Bankia*), Pl. 10, fig. 8.
albidula (*Guen.*), Noct. 2, p. 230 (*Erastria*).
carneola (*Guen.*), Noct. 2, p. 228 (*Erastria*); *biplaga* Walk., C. B. M., Noct. 809.
synochitis (*G. & R.*), Trans. Am. Ent. Soc. 1, p. 357 (*Erastria*).[18]
nigritula (*Guen.*), Noct. 2, p. 229 (*Erastria*), Pl. 10, fig. 7; *Miana undulifera* Walk., C. B. M. Noct., p. 258.
muscosula (*Guen.*), Noct. 2, p. 230 (*Erastria*).
musta (*G. & R.*), Trans. Am. Ent. Soc. 4, p. 358 (*Erastria*).
mitographa *Grote*, Trans. Am. Ent. Soc. 4, p. 296 (*Erastria*)
malaca *Grote*, Trans. Am. Ent. Soc. 4. p. 296 (*Erastria*).
Eastern to Southern States.

CHAMYRIS, *Guenée* (1852).

Type: Acontia cerintha *Tr.*

cerintha (*Tr.*); Guen. Noct. 2, p. 225.
Eastern and Middle States.

*EROTYLA, *Hübner* (Tentamen).

Type: Noctua sulphurea *S. V.*

†**tortricina** (*Zeller*), Ver. z.-b. Gesell. S. 461, Tab. 2, fig. 5.
leo (*Guen.*), Noct. 2, p. 205; var. onagrus, *Guen.*, l. c., Pl. 10, fig. 2 (*Agrophila*); H.-S., Ex. fig. 209.
dama (*Guen.*), Noct. 2, p. 205 (*Agrophila*).
apicella *Grote*, Trans. Am. Ent. Soc. 4, p. 21 (*Emmelia*).
Eastern States, southward.

LEPIDOMYS, *Guenée* (1852).

Type: Lepidomys irrenosa *Guen.*

†**irrenosa** *Guen.*, Noct. 2, p. 202, Pl. 10, fig. 1.
New York.

*METOPONIA, *Duponchel* (1844).

Type: Aegle flava *Hübn.*

obtusa *Herr.-Sch.*, Ex. p. 68, fig. 210.
New York and Pennsylvania.

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[17] "Erastria" is first used by Hübner for the Geometrid Erastria amataria; Treitschke's use of Hübner's generic name cannot be followed.

[18] Nach briefl. Mit. des Herrn Prof. Zeller, mit *venustula* verwandt.

FASCIATAE *Borkhausen* (1792).

{ Quadrifidae *Guen.* (restr.), 1852. }
{ Catocalinae *Packard*, 1867. }

DRASTERIA, *Hübner* (1816).

Type: Phalaena erichtea *Cramer*.

erichtea (*Cram.*), 275 E.; ♂ *spadix* Cram. 275 F.; ***Cissusa spadix*** **Walk. Noct.**, 153; Guen., 3, 289; Grote, Bul. Buf. Soc. Nat. Sci. 1, 155; ***Microphysa*** *sobria* Walk., 835; ♀ *mundula* G. &. R. **Trans. Ent. Soc. Phil. 1, 191, Pl.** 4, fig. 35; var. agricola *G. & R.*, l. c., 189, Pl. 4, fig. 34; **var. ochrea** *Grote*, Bul. Buf. Soc. Nat. Sci. 1, 155; ***Poaphila narrata*** **Walk. Noct.**, 1474.

erichto *Guen.*, Noct. 3, 290; Grote, Bul. Buf. Soc. Nat. Sci. 1, 154.

coerulea *Grote*, Bul. Buf. Soc. Nat. Sci. 1, 155.

convalescens *Guen.*, Noct. 3, 289; Grote, Bul. Buf. Soc. Nat. Sci. 1, p. 154.

Canada to California and Southern States.

*EUCLIDIA, *Hübner* (Tentamen).

Type: Phalaena glyphica *L.*

* **cuspidea** (*Hübn.*), Zutr. 69, 70 (*Drasteria*); Guen. (*Euclidia*) Noct. 3, 292.

† **capiticola** *Walk.*, C. B. M. Noct., 1461.

† **petricola** *Walk.*, C. B. M. Noct., 1463.

Atlantic District and California.

PARALLELIA, *Hübner* (1816).

Type: Par. bistriaria *Hübn.*

bistriaria *Hübn.*, Zutr. 1, S. 15, figs. 63, 64.

Atlantic District.

AGNOMONIA, *Hübner* (1816).

Type: Noctua anilis *Drury*.

anilis (*Drury*), 2, 21, Pl. 12, fig. 3; *Ag. sesquistriaris* Hübn., Zutr. 419, 420.

Atlantic District.

POAPHILA, *Guenée* (1852).

Type: Agnomonia quadrifilaris *Hübn.*

quadrifilaris (*Hübn.*), Zutr. S. 37, figs. 569, 570.

† **deleta** *Guen.*, Noct. 3, p. 300.

† **sylvarum** *Guen.*, Noct. 3, p. 300, Pl. 23, fig. 2.

† **erasa** *Guen.*, Noct. 3, p. 301.

† **herbicola** (*Boisd.*), *Guen.*, Noct. 3, p. 301.

† **perplexa** (*Boisd.*), *Guen.*, Noct. 3, p. 302.
† **contempta** (*Boisd.*), *Guen.*, Noct. 3, p. 302.
herbarum (*Boisd.*), *Guen.*, Noct. 3, p. 303.
bistrigata (*Hübn.*), Zutr. figs. 111, 112 (*Ptichodes*).
† **flavistiaris** *Hübn.*), Zutr. figs. 555, 556 (*Crochiphora*).
(?) † **Smithii** (*Guen.*), Noct. 3, p. 266 (*Ophiusa*), Pl. 22, fig. 4.
(?) † **similis** (*Boisd.*), Guen., Noct. 3, p. 267 (*Ophiusa*).
(?) † **consobrina** (*Guen.*), Noct. 3, p. 268 (*Ophiusa*).[19]
Canada, southward.

PHURYS, *Guenée* (1852).

Type: Phurys vinculum *Guen.*

vinculum *Guen.*, Noct. 3, p. 304.
lima *Guen.*, Noct. 3, p. 305.
Southern States.

CELIPTERA, *Guenée* (1852).

Type: Cel. frustulum *Guen.*

frustulum *Guen.*, Noct. 3, p. 308; *Litomitus elongatus* Grote, Proc. Ent. Soc. Phil. 3, p. 85, Pl. 2, fig. 6.
Canada, southward.

PHOBERIA, *Hübner* (1816).

Type: Phoberia atomaris *Hübn.*

atomaris *Hübn.*, Zutr. S. 35, figs. 75, 76; *? Lyssia orthosioides* Guen., 3, p. 296, Pl. 23, fig. 1.
New York, southward.

STICTOPTERA, *Guen.* (1852).

Type: Stictoptera cuculliodes *Guenée.*

divaricata *Grote*, 6th Ann. Rep. Peab. Acad. Sci. p. 41.
Wisconsin.

PANULA, *Guen.* (1852).

Type: Panula inconstans *Guen.*

† **inconstans** *Guen.*, Noct. 3, p. 59, Pl. 13, fig. 9.
† **remigipila** *Guen.*, Noct. 3, p. 60.
Am. Sept.

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[19] It is useless to increase this list by the addition of Mr. Walker's species.

* BOLINA, *Dup.*[20] (1844).

Type: Ophiusa cailino *Lefb.*

jucunda (*Hübn.*), Zutr. S. 17, figs. 81, 82 (*Melipotes*); *Bolina cinis* Guen., Noct. 3, p. 62.
nigrescens (*G. & R.*), Proc. Ent. Soc. Phil. 6, p. 20, Pl. 3, fig. 4 (*Aedia*).
pallescens (*G. & R.*), Proc. Ent. Soc. Phil. 6, p. 21, Pl. 3, fig. 5 (*Aedia*).
fasciolaris (*Hübn.*), Zutr. S. 15, figs. 443, 444 (*Aedia*).
† **hadeniformis** *Behr*, Trans. Am. Ent. Soc. 3, p. 25.
limbolaris (*Geyer*), Zutr. 689, 690 (*Aedia*).
California, Canada to Texas.

SYNEDA, *Guenée* (1852).

Type: Drasteria graphica *Hübn.*

hudsonica *G. & R.*, Proc. Ent. Soc. Phil. 4, 494, Pl. 3, figs. 7, 8.
graphica (*Hübn.*), Zutr. 11, 12 (*Drasteria*); Guen. Noct. 3, p. 71 (*Sÿneda*).
Howlandi *Grote*, Proc. Ent. Soc. Phil. 3, p. 533, Pl. 6, fig. 7.
† **ochracea** *Behr*, Trans. Am. Ant. Soc. 3, p. 25.
† **nubicola** *Behr*, Trans. Am. Ent. Soc. 3. p. 25.
† **maculosa** *Behr*, Trans. Am. Ent. Soc. 3, p. 26.
† **Stretchii** *Behr*, Trans. Am. Ent. Soc. 3, p. 27.
† **tejonica** *Behr*, Trans. Am. Ent. Soc. 3, p. 26.
† **socia** *Behr*, Trans. Am. Ent. Soc. 3, p. 27.
† **adumbrata** *Behr*, Trans. Am. Ent. Soc. 3, p. 27.
† **divergens** *Behr*, Trans. Am. Ent. Soc. 3, p. 27.
† **Edwardsii** *Behr*, Trans. Am. Ent. Soc. 3, p. 28.
California, Canada to Texas.

HYPOGRAMMA, *Guenée* (1852).

Type: Phalaena Sulima *Stoll.*

† **andromedae** *Guen.* Noct. 3, 36 (described from Abbot's drawings).
Georgia.

ALLOTRIA, *Hübner* (1816).

Type: Allotria elonympha *Hübn.*

elonympha *Hübn.*, Zutr. 29, 30; *Guen.*, Noct. 3, p. 37.
Canada, southward.

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[20] See *Lederer*, W. E. M. 5, 398. None of the American species have been examined by me recently, and need structural comparisons with the European.

PARTHENOS, *Hübner* (1816).

Type: Parthenos nubilis *Hübner*.

nubilis *Hübn.*, Ex. Schm.; Guen., Noct. 3, p. 80.
Canada, southward.

* CATOCALA, *Schrank* (1801).

Type: Noctua fraxini *L.*

Epione (*Drury*), 1, p. 46, Pl. 23, fig. 2 (*Noctua*); Westw. Ed. (*Catocala*); Guen. Noct. 3, p. 93; Grote, Cat. N. Am. No. 1, p. 2.

lacrymosa *Guen.*, Noct. 3, p. 93; Grote, Cat. N. Am., No. 2, p. 19; Strecker, Pl. 3, fig. 3.

Robinsoni *Grote*, Cat. N. Am. p. 20.

insolabilis *Guen.*, Noct. 3, p. 94; Grote, Cat. N. Am., No. 3, p. 3; Strecker, Pl. 5, fig. 1.

residua *Grote*, Proc. Bost. Soc. N. Hist. 16, p. 242 (1874).

obscura *Streck.*, Pl. 3, fig. 4.

viduata *Guen.*, Noct. 3, pp. 94 and 400; Grote, Cat. N. Am., No. 4, p. 3; Streck., Pl. 3, fig. 2.

desperata *Guen.*, Noct. 3, p. 95; Grote, Cat. N. Am., No. 5, p. 3; Strecker, Plate 5, fig. 2.

retecta *Grote*, Cat. N. Am., No. 6, p. 4.

flebilis *Grote*, Cat. N. Am., No. 7, p. 4.

tristis *Edw.*, Proc. Ent. Soc. Phil. 2, p. 511; Streck., Pl. 3, fig. 1.

relicta *Walk.*, C. B. M. Noct. 1192; Grote, Cat. N. Am., No. 9, p. 4; Streck., Pl. 3, figs. 5, 6.

†**adultera** *Hinze*, Etudes Motsch., 1857, p. 47; Ménétr., Nouv. Esp. Lep., p. 157, T. 17, fig. 1; Led., W. E. M., 8, S. 60 (California).

californica *Edw.*, Proc. Ent. Soc. Phil. 2, p. 509; Grote, Cat. N. Am., No. 10, p. 5.

Walshii *Edw.*, Proc., Ent. Soc. Phil. 2, p. 509; Grote, Can. Ent. 5, p. 233.

unijuga *Walk.*, C. B. M. Noct. 1194; Grote, Cat. N. Am., No. 12, p. 5; Streck., Pl. 5, fig. 9.

†**junctura** *Walk.*, C.B. M. Noct. 1196; Grote, Cat. N. Am., No. 13, p. 5.

semirelicta *Grote*, 6th Ann. Rep. Peab. Acad. Sci. p. 39.

Meskei *Grote*, Can. Ent. 5, p. 161.

Briseis *Edw.*, Proc. Ent. Soc. Phil. 2, p. 508; Grote, Cat. N. Am., No. 11, p. 5, Streck., Pl. 3, fig. 7.

†**Irene** *Behr*, Trans. Am. Ent. Soc. 3, p. 24.

†**Stretchii** *Behr*, Trans. Am. Ent. Soc. 3, p. 24.

Faustina *Streck.*, Pl. 3, fig. 8 ; Grote, Proc. Bost. Soc. N. H. 16, p. 243.

parta *Guen.*, Noct. 3, p. 84; Grote, Cat. N. Am., No. 15, p. 6; var. perplexa | *Streck.*, Pl. 5, fig. 11 ; *C. amatrix* ‡ Walk., C. B. M. 1195 (not Hübner).

coccinata *Grote*, Cat. N. Am. No. 16, p. 6; Strecker, Pl. 3, fig. 9.

ultronia (*Hübn.*), Zutr. 347, 348 (*Eunetis*); Guen., Noct. 3, p. 89 (*Catocala*).

concumbens *Walk.*, C. B. M., 1198; Grote, Cat. N. Am. No. 20, p. 7; Strecker, Pl. 5, fig. 12.

amatrix (*Hübn.*), Exot. Schm. 2 (*Lamprosia*); Guen., 3, 86 (*Catocala*); *Cat. selecta* Walk., C. B. M., 1197; *C. nurus* Walk., 1195; Grote, Cat. N. Am. No. 18, p. 7.

arizonae *Grote*, Can. Ent. 5, p. 163.

cara *Guen.*, Noct. 3, p. 87; Grote, Cat. N. Am. No. 19, p. 7.

marmorata *Edw.*, Proc. Ent. Soc. Phil. vol. 2, p. 508.

Ilia (*Cramer*), Exot. Pl. 33, figs. B. C. (*Phalaena*); Guen. Noct. 3, p. 91 (*Catocala*); Grote, l. c., No. 22, p. 8.

† **uxor** *Guen.* (n. b. l.), Noct. 3, p. 92.

† **Zoe** *Behr*, Trans. Am. Ent. Soc. 3, p. 24.

innubens *Guen.*, Noct. 3, p. 98; var. scintillans *G. & R.*, Proc. Ent. Soc. Phil. 6, p. 28, Pl. 4, fig. 6; Grote, Cat. N. Am. No. 24, p. 8.

cerogama *Guen.*, Noct. 3, p. 96; Grote, Cat. N. Am. No. 25, p. 9; Strecker, Pl. 3, fig. 10.

neogama *Guen.*, Noct. 3, p. 96; ? *Phal. neogama* Abb. & Sm., Pl. 88; Grote, Cat. N. Am. No. 26, p. 9; Strecker, Pl. 5, figs. 4, 5. (C. communis *Grote.*)

subnata *Grote*, Proc. Ent. Soc. Phil. 3, p. 326, Pl. 4, fig. 5; Grote, Cat. N. Am. No. 27, p. 9; Strecker, Pl. 5, fig. 3.

piatrix *Grote*, Proc. Ent. Soc. Phil. 3, pp. 88, 532, Pl. 3, fig. 3; l. c., No. 28, p. 10.

palaeogama *Guen.*, Noct. 3, p. 97; Grote, Proc. Ent. Soc. Phil. 3, pp. 87, 541, Pl. 3, fig. 2; var. phalanga *Grote*, l. c., p. 86, Pl. 3, fig. 1; Cat. N. Am. No. 29, pp. 10, 11.

habilis *Grote*, Cat. N. Am. No. 30, p. 11.

consors (*Abb. & Sm.*), Ins. Ga. Pl. 89 (*Phalaena*); Guen. Noct. 3, p. 99 (*Catocala*) Grote, l. c., No. 31, p. 11.

ponderosa *G. & R.*, Proc. Ent. Soc. Phil. 6, Pl. 4, fig. 2; *C. nebulosa* | Edw. Proc. Ent. Soc. Phil. 3, p. 510; Grote, l. c., No. 32, p. 11.

muliercula *Guen.*, Noct. 3, p. 97; Grote, Cat. N. Am. No. 33, p. 12.

badia *G. & R.*, Proc. Ent. Soc. Phil. 6, Pl. 4, fig. 1; Grote, l. c., No. 34, p. 12.

antinympha (*Hübn.*), Verz. S. 278, No. 2731; *paranympha* ‡ Drury, 1, 23, 6; *affinis* Westw., Ed. Drury; *melanympha* Guen., Noct. 3, p. 98; Walk., C. B. M., 1203 (*Catocala*); Grote, l. c., No. 35, p. 13; Strecker, Pl. 5, fig. 7.[21]

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[21] For this species Mr. Strecker has copied a reference to Hübner's Exotic Butterflies; Hübner does not illustrate the species to my knowledge.

serena *Edw.*, Proc. Ent. Soc. Phil. 2, 510; Grote, l. c., No. 36, p. 13; Strecker, Pl. 3, fig. 11.

illecta *Walk.*, C. B. M., 1205; Grote, Cat. N. Am. No. 37, p. 13.

Clintoni *Grote*, Proc. Ent. Soc. Phil. 3, p. 89, Pl. 3, fig. 4; Cat. N. Am. No. 38, p. 13; Strecker, Pl. 5, fig. 6.

nuptialis *Walk.*, C. B. M., 1206.

abbreviatella *Grote*, Cat. N. Am. No. 40, p. 14.

Frederici *Grote*, Cat. N. Am. No. 41, p. 14.

† **micronympha** *Guen.*, Noct. 3, p. 102; Grote, Cat. N. Am. No. 42, p. 15.

polygama *Guen.*, Noct. 3, p. 105; Grote, l. c., No. 43, p. 15.

Amasia (*Abb. & Sm.*), Ins. Ga. Pl. 90 (upper fig.) (*Phalaena*); Westwood, Nat. Libr. Exot. Moths, 205, Pl. 26, fig. 3 (*Catocala*); Grote, Cat. N. Am. No. 44, p. 16.

formula *G. & R.*, Proc. Ent. Soc. Phil. 6, Pl. 4, fig. 5; *Amasia* ‡ Abb. & Sm., Pl. 90, (lower fig.); Grote, l. c., No. 45, p. 16.

Grynea (*Cramer*), Pl. 208, fig. H. (*Phalaena*); Walk., C. B. M., 1205 (*Catocala*); *C. nuptula* Walk., l. c., p. 1205; Grote, Cat. N. Am. p. 16, No. 47.

† **connubialis** *Guen.*, Noct. 3, p. 105; Grote, l. c., No. 46, p. 16.

praeclara *G. & R.*, Proc. Ent. Soc. Phil. 6, Pl. 4, fig. 4; Grote, l. c., No. 48, p. 17.

fratercula *G. & R.*, Proc. Ent. Soc. Phil. 6, Pl. 4, fig. 3; Grote, l. c., No. 49, p. 17; Strecker, Pl. 5, fig. 8.

minuta *Edw.*, Proc. Ent. Soc. Phil. 2, p. 512; var. parvula *Edw.*, l. c., p. 512; Grote, Cat. N. Am. No. 50, p. 17.

gracilis *Edw.*, Proc. Ent. Soc. Phil. 2, p. 511; *similis* Edw., l. c., p. 511; Grote, Cat. N. Am. No. 51, p. 17.

androphila *Guen.*, Noct. 3, p. 106; *Ephesia amica* ‖ Hübn., Zutr., S. 14, figs. 57, 58; Grote, Cat. Am. N. Am., p. 18, No. 52.

lineella *Grote*, Cat. N. Am., No. 53, p. 18.

† **messalina** *Guen.*, Noct. 3, p. 107; Grote, Cat. Am., No. 54, p. 19.

Canada to California and Southern States.

SPILOLOMA, *Grote* (1873).

Type: Spiloloma lunilinea *Grote.*

lunilinea *Grote*, Bul. Buf. Soc. Nat. Sci. 1, p. 127.

Virginia, Kansas.

HARVEYA, *Grote* (1873).

Type: Harveya auripennis *Grote.*

auripennis *Grote*, Bul. Buf. Soc. Nat. Sci. 1, p. 126.

Kentucky, southward.

PANOPODA, *Guenée* (1852).

Type: Phoberia rufimargo *Hübn.*

rufimargo (*Hübn.*), Zutr., 45, 46; *Panop. rubricosta* Guen., Noct. 3, p. 324; *Panop. roseicosta* Guen., Noct. 3, p. 325; *Panop. Cressonii* Grote, Proc. Ent. Soc., Phil. 1, p. 346, Pl. 3, fig. 4.

carneicosta *Guen.*, Noct. 3, p. 325.

New York, southward.

PLEONECTYPTERA, *Grote* (1872).

Type: Hemeroplanis pyralis *Hübn.*

pyralis (*Hübn.*), Zutr., 127, 128; *Grote*, Trans. Am. Ent. Soc. 4, p. 23.

geometralis *Grote*, Trans. Am. Ent. Soc. 4, p. 24.

phalaenalis *Grote*, Trans. Am. Ent. Soc. 4, p. 24.

Southern States.

EUTOREUMA, *Grote* (1872).

Type: Eutoreuma tenuis *Grote.*

tenuis *Grote*, Trans. Am. Ent. Soc. 4, p. 22.

Alabama.

ISOGONA, *Guenée* (1852).

Type: Isogona natatrix *Guen.*

† **natatrix** *Guen.*, Noct. 3, p. 323.

Am. Sept.

REMIGIA,[22] *Guenée* (1852).

Type: Remigia latipes *Guen.*

latipes *Guen.*, Noct. 3, p. 314.

† **disseverans** *Walk.*, C. B. M. Noct., 1495.

† **marcida** *Guen.*, Noct. 3, p. 317.

Canada, southward.

ANTICARSIA, *Hübner* (1818).

Type: Anticarsia gemmatalis *Hübn.*

† **gemmatalis** *Hübn.*, Zutr. 1, S. 26, figs. 153, 154; Guen. Noct. 3, p. 356.

United States.

ANTIBLEMMA, *Hübner* (1816).

Type: Antiblemma acclinalis *Hübn.*

canalis *Grote*, List (35).

New York.

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[22] A recent study of this genus leads me to place it with Phurys and Celiptera.

AGASSIZIA, *Behr* (1870).

Type: Agassizia urbicola *Behr.*

† **urbicola** *Behr,* Trans. Am. Ent. Soc. 3, p. 23.
California.

CAPNODES, *Guenée* (1852).

Type: Capnodes Irene *Guen.*

† **californica** *Behr,* Trans. Am. Ent. Soc. 3, p. 23.
California.

EREBUS, *Latreille* (1809).

Type: Noctua odora *L.*

odora (*Linn.*); Guen. Noct. 3, p. 167.
Canada to Brazil and California.

BENDIS, *Hübner* (1816).

Type: Bendis irregularis *Hübn.*

† **hinna** (*Geyer*), Zutr., S. 41, figs. 971, 972 (*Acolasia*); Guen., Noct. 3, 216.
Southern States.

PHEOCYMA, *Hübner* (1816).

Type: Pheocyma lunifera *Hübn.*

lunifera *Hübn.*, Zutr., S. 1, figs. 97, 98; *Guen.*, Noct. 3, p. 3, Pl. 15, fig. 9.
Southern States.

HOMOPTERA, *Boisd.* (1829).

Type: Noctua lunata *Drury.*

lunata (*Drury*), 1, p. 40, Pl. 20, fig. 3; Guen., Noct. 3, p. 12.
Saundersii *Bethune,* Proc. Ent. Soc. Phil. 4, p. 215.
edusa (*Drury*), 2, Pl. 24, fig. 4; Guen. Noct. 3, p. 14.
minerea *Guen.*, Noct. 3, p. 15, Pl. 18, fig. 6.
calycanthata (*Abb. & Sm.*), 2, 104; Guen., Noct. 3, p. 15.
obliqua *Guen.*, Noct. 3, p. 16, Pl. 15, fig. 7.
† **albofasciata** *Bethune,* Can. Journ. 8 ("Noct. Lep. found in Can." p. 10), July, 1865.
† **duplicata** *Bethune,* Can. Journ. 8 ("Noct. Lep. found in Can." p. 11), July, 1865.
nigricans *Bethune,* Proc. Ent. Soc. Phil. 4, p. 214.
† **involuta** *Walk.*, C. B. M. Noct., 1055.
† **contracta** *Walk.*, Can. Nat. and Geol., 5, 258.

† **herminioides** *Walk.*, Can. Nat. and Geol., 5, 259.
† **lineosa** *Walk.*, C. B. M. Noct., 1056.
Canada, southward to Brazil.

YPSIA, *Guenée* (1852).

Type: Ypsia aeruginosa *Guen.*

aeruginosa *Guen.*, Noct. 3, p. 17, Pl. 18, fig. 7.
undularis (*Drury*), 1, p. 19, Pl. 9, fig. 4 (*Noctua*); Guen., Noct. 3, p. 18 (*Ypsia*).
Canada southward.

PSEUDANTHRACIA, *Grote* (1874).

Type: Anthracia [23] coracias *Guen.*

coracias (*Guen.*), Noct. 3, p. 19 (*Anthracia*); ? *squammularis* Drury, vol. 1, p. 18, Pl. 9, fig. 3.
† **cornix** (*Guen.*), Noct. 3, p. 19, Pl. 15, fig. 8.
Canada, southward.

ZALE, *Hübner* (1816).

Type: Zale horrida *Hübner.*

horrida *Hübn.*, Zutr., S. 11, figs. 31, 32; *Hom. calycanthata* ‡ Walk. et Beth., l. c.
Canada, southward.

CAMPOMETRA, *Guenée* (1852).

Type: Campometra amella *Guen.*

† **amella** *Guen.*, Noct. 3, p. 25, Pl. 18, fig. 8.
Southern States.

MATIGRAMMA, *Grote* (1872).

Type: Matigramma pulverilinea *Grote.*

pulverilinea *Grote*, Trans. Am. Ent. Soc. 4, p. 22.
Alabama and Texas.

ARGILLOPHORA, *Grote* (1873).

Type: Argillophora furcilla *Grote.*

furcilla *Grote*, Bul. Buf. Soc. Nat. Sci. 1, p. 124.
Southern States.

SPARGALOMA, *Grote* (1873).

Type: Spargaloma sexpunctata *Grote.*

sexpunctata *Grote*, Trans. Am. Ent. Soc. 4, p. 300, Pl. 1, fig. 90.
umbrifascia *Grote*, Trans. Am. Ent. Soc. 4, p. 301.
Massachusetts to Southern States.

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[23] This is not Hübner's genus which is based on *Ephialtes* (unknown to me) and *undularis*.

SYLECTRA, *Hübner* (1816).

Type: Sylectra mirandalis *Hübn.*

erycata (*Cramer*), Ex. 3, 170 (*Phalaena*), 287 D.; Ex. 4, 157, Pl. 370 E.; *mirandalis* Hübn., Exot. Samml.; Verz., 3280; *Teratocera ericata* Guen., Noct. 3, 340; Grote, Proc. Ent. Soc. Phil. 2, p. 441.

Atlantic Coast.

PANGRAPTA, *Hübner* (1816).

Type: Pangrapta decoralis *Hübn.*

decoralis *Hübn.*, Zutr., figs. 93, 94; *Marmorinia epionoides* Guen., Noct. 3, p. 371; *Marm. geometroides* Guen., Noct. 3, p. 371; *Hypena elegantalis* Fitch, 2d Rep., p. 327, Pl. 1, fig. 2.

Canada, southward.

PHALAENOSTOLA, *Grote* (1873).

Type: Phalaenostola larentioides *Grote.*

larentioides *Grote*, Trans. Am. Ent. Soc., 4, p. 302.

eltima *Grote*, l. c., p. 303.

Canada to Virginia.

DELTOÏDES *Latreille.*

PSEUDAGLOSSA, *Grote* (1874).

Type: Epizeuxis lubricalis *Geyer.*

lubricalis (*Geyer*), Zutr., S. 19, figs. 665, 666; *Helia*[24] *phaealis* Guen., Delt., p. 76; Grote, Trans. Am. Ent. Soc., 4, p. 308; *Bleptina surrectalis* Walk., Delt., pp. 120, 860.

Canada, southward, and California.

* EPIZEUXIS, *Hübner* (1816).

Type: Pyralis calvarialis *W. V.*

americalis (*Guen.*), Delt., p. 78 (*Helia*), Pl. 6, fig. 5; Walk., Delt., p. 134 (*Epizeuxis*); *Microphysa? scriptipennis* Walk., Noct. p. 1765; Grote, Trans. Am. Ent. Soc., 4, p. 307.

aemulalis *Hübn.*, Verz., S. 346, No. 3313; *Guen.*, Delt., p. 78 (*Helia*); Grote, Trans. Am. Ent. Soc., 4, p. 307; Walk., Delt., 134; *Microphysa? mollifera* Walk., Noct., p. 1765.

Canada, southward.

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[24] *Helia* is pre-occupied by *Hübner*, Verzeichniss, S. 259.

MEGACHYTA, *Grote* (1873).

Type: Epizeuxis lituralis *Hübn.*

lituralis (*Hübn.*), Zutr., 19, 20; Grote, Trans. Am. Ent. Soc. 4, 306; Zeller, Ver. z.-b. G., S. 443 (*Zanclognatha*).

deceptricalis (*Zeller*), Verh. z.-b. G., S. 474.

Canada, southward.

LITOGNATHA, *Grote* (1873).

Type: Litognatha nubilifascia *Grote.*

nubilifascia *Grote*, Bul. Buf. Soc. Nat. Sci. 1, 85, Pl. 2, figs. 2, 3.

litophora *Grote*, Bul. Buf. Soc. Nat. Sci. 1, p. 86.

Canada, southward.

CHYTOLITA, *Grote* (1873).

Type: Herminia morbidalis *Guen.*

morbidalis (*Guen.*), Delt. p. 56, Pl. 6, fig. 3 (*Herminia morbillosalis*); Grote, Trans. Am. Ent. Soc. 4, pp. 96 and 309; Bul. Buf. Soc. Nat. Sci. 1, p. 39.

Canada, southward.

* PITYOLITA, *Grote* (1873).

Type: Herminia pedipilalis *Guen.*

pedipilalis (*Guen.*), Delt., p. 57 (*Herminia*); Grote, Trans. Am. Ent. Soc. 4, 96; Bul. Buf. Soc. Nat. Sci. 1, p. 39.

Canada, southward.

* ZANCLOGNATHA, *Led.* (1857).

Type: Paracolax tarsiplumalis *Hübn.*

laevigata *Grote*, Trans. Am. Ent. Soc. 4, 95 (*Herminia*); Bul. Buf. Soc. Nat. Soci. 1, p. 39 (*Zanclognatha*).

ochreipennis *Grote*, Trans. Am. Ent. Soc. 4, 98 (*Herminia*); Bul. Buf. Soc. Nat. Sci. 1, p. 39 (*Zanclognatha*).

cruralis (*Guen.*), Delt. p. 58 (*Herminia*); Grote, Bul. Buf. Soc. Nat. Sci. 1, p. 39 (*Zanclognatha*).

marcidilinea *Grote*, Trans. Am. Ent. Soc. 4, pp. 97 and 309 (*Herminia*); Bul. Buf. Soc. Nat. Sci. 1, p. 39 (*Zanclognatha*).

obscuripennis *Grote*, Trans. Am. Ent. Soc. 4, pp. 98 and 309 (*Herminia*); Bul. Buf. Soc. Nat. Sci. 1, p. 39 (*Zanclognatha*).

† **jacchusalis** (*Walk.*), C. B. M. Delt., p. 104 (*Herminia*).

† **protumnusalis** (*Walk.*), l. c., p. 104 (*Herminia*).

† **eumelusalis** (*Walk.*), l. c., p. 105 (*Herminia*).

†**cloniasalis** (*Walk.*), l. c., p. 105 (*Herminia*).

†**pyramusalis** (*Walk.*), l. c., p. 106 (*Herminia*); *Herm. gyasalis* Walk. l. c., p. 856.

†**phalerosalis** (*Walk.*), l. c., p. 107 (*Herminia*).

†**salusalis** (*Walk.*), l. c., p. 107 (*Herminia*).

†**heliusalis** (*Walk.*), l. c., p. 108 (*Herminia*).

†**clitosalis** (*Walk.*), l. c., p. 108 (*Herminia*).

Canada, southward.

CLEPTOMITA, *Grote* (1873).

Type: Cleptomita atrilineella *Grote.*

atrilineella *Grote,* Trans. Am. Ent. Soc. 4, p. 301.

Texas.

COPTOCNEMIA, *Zeller* (1872).

Type: Coptocnemia floccalis *Zeller.*

†**floccalis** *Zeller,* Verh. z.-b. G., S. 476, Tab. 1, fig. 10.

Texas.

*COLOBOCHILA, *Hübner* (1816).

Type: Pyralis salicalis *W. V.*

interpuncta *Grote,* Trans. Am. Ent. Soc. 4, pp. 93 and 309; *Col. saligna Zeller,* Verh. z.-b. G., S. 462; Bul. Buf. Soc. Nat. Sci. 1, p. 170.

Southern States.

PHILOMETRA, *Grote* (1872).

Type: Herminia longilabris *Grote.*

longilabris *Grote,* Trans. Am. Ent. Soc. 4, pp. 99 and 309; Bul. Buf. Soc. Nat. Sci. 1, p. 40.

serraticornis *Grote,* Trans. Am. Ent. Soc. 4, pp. 98 and 309; Bul. Buf. Soc. Nat. Sci. 1, p. 40.

Canada, southward.

SISYRHYPENA, *Grote* (1873).

Type: Sisyr. pupillaris *Grote.*

pupillaris *Grote,* Can. Ent., 5, 227.

Texas.

TETANOLITA, *Grote* (1873).

Type: Tetan. lixalis *Grote.*

lixalis *Grote,* Trans. Am. Ent. Soc., 4, p. 306.

Texas.

PALTHIS, *Hübner* (1816).

Type: Palthis angulalis *Hübn.*

angulalis *Hübn*, Verz., S. 342; Grote, Trans. Am. Ent. Soc. 4, pp. 107 and 309.

asopialis (*Guen.*), Delt., p. 96 (*Clanyma*); Grote, Trans. Am. Ent. Soc. 4, pp. 108 and 309.

Canada, southward.

PHALAENOPHANA,[25] *Grote* (1873).

Type: Phal. rurigena *Grote.*

rurigena *Grote*, Trans. Am. Ent. Soc. 4, p. 305.

Canada, southward.

HORMISA, *Walker* (1859).

Type: Hormisa absorptalis *Walk.*

†**absorptalis** *Walk.*, C. B. M. Delt., p. 74.

United States.

RENIA, *Guenée* (1854).

Type: Renia discoloralis *Guen.*

discoloralis *Guen.*, Delt., p. 83; Grote, Trans. Am. Ent. Soc. 4, p. 24; *Hypena fallacialis* Walk., Delt., p. 38.

brevirostralis *Grote*, l. c., pp. 25, 309, Pl. 1, figs. 91, 92.

alutalis *Grote*, l. c., pp. 99, 309.

plenilinealis *Grote*, l. c., pp. 99, 309.

larvalis *Grote*, l. c., pp. 26, 309.

centralis *Grote*, l. c., pp. 27, 309.

restrictalis *Grote*, l. c., pp. 26, 309, Pl. 1, fig. 94.

Belfragei *Grote*, l. c., pp. 27, 304, 309, Pl. 1, fig. 95; *Renia pastoralis* Grote, l. c.

Canada, southward.

BLEPTINA, *Guenée* (1854).

Type: Bleptina caradrinalis *Guen.*

caradrinalis *Guen*, Delt., p. 67; Grote, Trans. Am. Ent. Soc. 4, p. 93.

inferior *Grote*, Trans. Am. Ent. Soc. 4, p. 94.

Canada, southward.

*RIVULA, *Guenée* (1844).

Type: Pyralis sericealis *W. V.*

propinqualis *Guen.*, Delt., p. 49.

Canada, southward.

[illegible] ocelli, as I have observed since originally describing it. None of our [illegible] Noctuidae except *Feralia jocosa* appear to have the ocelli wanting. In the [illegible] *Hypenodes* and *Orectis*, they are said to be absent.

* BOMOLOCHA, *Hübner* (1816).

Type: Pyralis crassalis *Fabr.*

scutellaris *Grote*, Can. Ent. 5, p. 225.

baltimoralis (*Guen.*), Delt. p. 34 (*Hypena*); Grote, Trans. Am. Ent. Soc. 4, pp. 102, 309; *Hypena laciniosa* Zeller, Verh. z.-b. G., S. 464, Tab. 2, fig. 8; *Hypena benignalis* Walk., Delt., p. 32.

† **albisignalis** (*Zeller*), Verh. z.-b. G., S. 463 (*Hypena*).

abalienalis (*Walk.*), Delt., p. 31 (*Hypena*); Grote, Trans. Am. Ent. Soc. 4, pp. 102, 309.

bijugalis (*Walk.*), Delt. p. 52 (*Hypena*); Grote, Trans. Am. Ent. Soc. 4, pp. 103 and 309, Pl. 1, fig. 93; *Hypena pallialis* Zell., Ver. z.-b. G., S. 466, Tab. 2, fig. 9.

manalis (*Walk.*), Delt., p. 33 (*Hypena*); Grote, Trans. Am. Ent. Soc. 4, pp. 103 and 309.

achatinalis (*Zeller*), Verh. z.-b. G., S. 22, Tab. 2, fig. 7 (*Hypena*); Hypena madefactalis *Grote*, Trans. Am. Ent. Soc. 4, pp. 103 and 309; ? *Hypena madefactalis* Guen., Delt. p. 35.

Canada, southward.

EUHYPENA, *Grote* (1873).

Type: Hypena internalis | *Robinson.*

toreuta *Grote*, Trans. Am. Ent. Soc. 4, pp. 24 and 310; *Hypena internalis* | Rob., Ann. N. Y. Lyc. 9, 311.

sordidula *Grote*, Trans. Am. Ent. Soc. 4, pp. 103 and 310.

Canada, southward.

MACRHYPENA, *Grote* (1873).

Type: Hypena deceptalis *Walk.*

deceptalis (*Walk.*), Delt., p. 30 (*Hypena*); Grote, l. c., pp. 104 and 310.

profecta *Grote*, l. c., 4, pp. 104 and 310; Bul. Buf. Soc. Nat. Sci. 1, p. 38.

Canada, southward.

LOMANALTES, *Grote* (1873).

Type: Lomanaltes laetulus *Grote.*

laetulus *Grote*, Bul. Buf. Soc. Nat. Sci. 1, p. 14, Pl. 1, figs. 12, 13.

Canada to Pennsylvania.

*MEGHYPENA,[26] *Grote* (1873).

Type: Meghypena velifera *Grote.*

velifera *Grote*, Bul. Buf. Soc. Nat. Sci. 1, p. 87, Pl. 2, fig. 7.
lentiginosa *Grote*, Bul. Buf. Soc. Nat. Sci. 1, p. 87.
New York.

*HYPENA, *Schrank* (1801).

Type: Pyralis rostralis *Linn.*

californica *Behr*, Trans. Am. Ent. Soc. 3, p. 23.
olivacea *Grote*, Can. Ent. 5, p. 226.
evanidalis *Robinson*, Ann. Lyc. N. H., 9, p. 311; Grote, Trans. Am. Ent. Soc. 4, pp. 101 and 309, Pl. 1, fig. 87.
humuli *Harris*, Ins. Inj. Veg. p. 477; Grote, Trans. Am. Ent. Soc. 4, p. 101; *Hypena germanalis* Walk., Delt., p. 35.?
citata *Grote*, Trans. Am. Ent. Soc. 4, p. 101.
† **edictalis** *Walk.*, C. B. M. Delt., p. 28.
† **damnosalis** *Walk.*, C. B. M. Delt., p. 29.
† **caducalis** *Walk.*, C. B. M. Delt., p. 35.
Canada, southward, and California.

PLATYHYPENA, *Grote* (1873).

Type: Hyblaea scabra *Fabr.*

scabra (*Fabr.*), Syst. Supp. 4 (*Hyblaea*); *Crambus crassatus* Haw., 366; *Hypena obesalis* Steph., 4, 11; *Hypena erectalis* Guen. (♀) Delt., 40; Lintn., Can. Ent. 5, p. 81; var. subrufalis *Grote*, Trans. Am. Ent. Soc. 3, p. 102.
Canada, southward.

HETEROGRAMMA, *Guenée* (1854).

Type: Heterogramma circumflexalis *Guen.*

indivisalis *Grote*, Trans. Am. Ent. Soc. 4, pp. 106 and 308.
Canada, southward.

TORTRICODES, *Guenée* (1854).

Type: Tortricodes pterophoralis *Guen.*

bifidalis *Grote*, Trans. Am. Ent. Soc. 4, pp. 105 and 310.
Canada, southward.

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[26] To this genus belongs the European M. proboscidalis.

NOCTUO-PHALAENIDI, *Boisd.* (1829).

Phalaenoidi *Guenée* 1841.
Brephides, *Herr.-Sch.* 1845.

* BREPHOS, *Hübner* (Tentamen).[27]

Type: Phalaena parthenias *Linn.*

infans *Möschl.*, W. E. M. 6, S. 134, Taf. 1, fig. 6; *Brephos parthenias* ‡ Möschl., W. E. M. 4, S. 371; *Brephos hamadryas* Harr., Scudd. Ent. Cor., p. 174, Pl. 1, fig. 4.

† **californicus** *Boisd.*, Ann. Soc. Ent. Belg., T. 12, p. 88.

† **melanis** *Boisd.*, Ann. Soc. Ent. Belg., T. 12, p. 88.

Labrador to Eastern States, and California.

LEUCOBREPHOS, *Grote* (1874).

Type: Anarta brephoides *Walk.*

brephoides *Walk.*, C. B. M., Noct. p. 702 (*Anarta*); Grote, Proc. Ent. Soc. Phil. 3, p. 74; *Archiearis resoluta* Zeller, Stett. Ent. Zeit. 24 Jahr., S. 136, Taf. 2, fig. 1.

Hudson's Bay Territory.

NOTE 1. While this List was passing through the press, Mr. H. K. Morrison kindly sent me a specimen of an undescribed species allied to Actinotia. On re-examining my types in this latter genus I find that two of the species agree structurally with Mr. Morrison's new species, and that they differ from Ac. ramosula and the three European species of the genus, by the hairy eyes. I dedicate the new genus to its discoverer:

MORRISONIA, *Grote* (1874).

Type: Cloantha evicta *Grote.*

evicta *Grote; Actinotia evicta* Grote, List, p. 16.

vomerina *Grote; Actinotia vomerina* Grote, List, p. 16.

The position of the genus will be after Actinotia.

NOTE 2. Prof. C. V. Riley has kindly sent me specimens determined as Agrotis Cochrani; they belong to Agrotis repentis; the latter name is the more recent.

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[27] This use of this generic term is the earliest I find, and ante-dates *Archiearis*.

NOTE 3.—In investigating the synonomy of the genus Apamea, I find that under its restriction by Lederer it contains one of the original species: *testacea*. This might be considered as the type of the genus. But *testacea* is also included by Boisduval, in 1829, in his genus Luperina, which must be regarded as a disintegration of Apamea, although its distinguished author seems to regard it as synonymous. Whether the terms Luperina or Apamea prevail for Apamea *Led.*, a new name is necessary for Luperina *Led.*, which contains none of Boisduval's original species of Luperina. For this genus I propose the name Ledereria (*Luperina* Led., non Boisd.) As yet I know no American species of Apamea (in sensu Led.) or Ledereria (*Luperina* in sensu Led.).

CORRECTIONS:

Page 2, foot note, for "Sco." read "Sec."
" 4, line 36, dele "H."
" 15, line 12, for "*Walk.*" read "(*Walk.*)"
" 15, line 15, for "*Walk.*" read "(*Walk.*)"
" 23, line 7, for "*Oth*" read "*Orthos.*"
" 29, after line 5 insert "Canada, southward."
" 31, line 33, for "*algioda*" read "*algida*"
" 35, line 12, for "dipsaci" read "dipsacea"
" 38, line 13, for "coerulea" read "caerulea"
" 39, line 5, for "flavistiaris" read "flavistriaria"
" 40, line 3, for "*Melipotes*" read "*Melipotis*"

INDEX TO GENERA.

Page.
Ablepharon, 21
Abrostola, 30
Achatodes, 20
Acolasia, 45
Acontia, 36
Acronycta, 7
Actinotia, 16
Adipsophanes, 28
Adita, 12
Admetovis 19
Aedia, 40
Agassizia 45
Agnomonia, 38
Agrapha, 30
Agrophila, 37
Agrotis, 9
Alaria, 33
Aletia, 24
Allotria, 40
Ammoconia, 12
Anarta, 31
Annaphila, 35
Anomis, 23
Antiblemma, 44
Anticarsia, 44
Anytus 27
Apamea, 15, 54
Apatela, 7
Aplecta, 12
Archiearis, 53
Argillophora, 46
Arzama, 19
Aspila, 33
Atethmia, 24
Auchmis, 12

Page.
Autographa, 31
Axenus, 35
Bankia, 37
Basilodes 29
Bendis, 45
Bleptina, 50
Bolina, 40
Bombycia 5
Bomolocha, 51
Brephos, 53
Brotolomia, 18
Bryophila, 8
Callopistria, 17
Calocampa, 27
Calpe, 29
Calymnia, 24
Campometra, 46
Capnodes, 45
Caradrina, 22
Catocala 41
Celaena, 16
Celiptera, 39
Ceramica, 22
Cerastis, 26
Chamyris, 37
Charadra 6
Chariptera, 14
Chloridea, 33
Choephora 25
Chytolita, 48
Chytonix, 14
Cirrhoedia, 24
Cirrhophanus, 19
Cissusa, 38
Cleoceris, 25

Page.
Cleptomita, 49
Cloantha, 16
Colobochila, 49
Conservula, 17
Copipanolis, 14
Coptocnemia, 49
Cosmia, 24
Crambodes, 28
Crymodes, 15
Cucullia, 28
Cymatophora, 5
Derrima, 33
Deva, 30
Dianthoecia, 13
Dichagramma, 26
Dicopis, 6
Diphtera, 6
Dipterygia 16
Doryodes, 20
Drasteria, 38
Dyachrisia, 30
Dyops, 30
Emmelia, 37
Epizeuxis, 47
Erastria, 37
Erebus, 45
Eriopus, 17
Erotyla, 37
Euclidia, 38
Eucoptocnemis, 13
Euhypena, 51
Eulepidotis, 24
Euleucyptera, 34
Eunetis, 42
Euplexia, 17
Eupsephopaectes, 17
Eurois, 12
Eustrotia, 37
Eutelia, 38
Euthisanotia, 20
Eutoreuma, 44
Feralia, 6
Galgula, 36

Page.
Glaea, 26
Gortyna, 18
Grammophora, 9
Graphiphora, 11
Habrosyne, 5
Hadena, 14
Hapalia, 13
Harrisimemna, 6
Harveya, 43
Hecatera, 13
Heliochilus, 35
Heliolonche, 34
Heliophila, 21
Heliophobus, 13
Heliothis, 35
Helotropha, 18
Hemiceras, 29
Heterogramma, 52
Herminia, 48
Homohadena, 14
Homoptera, 45
Hormisa, 50
Hydroecia, 18
Hypena, 52
Hypogramma, 40
Hypsoropha, 29
Hyppa, 16
Ingura, 29
Ipimorpha, 24
Isogona, 44
Jaspidea, 8
Jodia, 25
Lacinia, 5
Lamprosia, 42
Lamprosticta, 14
Laphygma, 22
Ledereria, 54
Lepidomys, 37
Lepipolys, 32
Leptina, 5
Leptosia, 36
Leucania, 21
Leucobrephos, 53

Page.
Lithacodia, 8
Lithophane, 26
Litognatha, 48
Litomitus, 39
Litoprosopus, 30
Lomanaltes, 51
Luperina, 18, 54
Lygranthoecia, 33
Lyssia, 39
Macrhypena, 51
Macronoctua, 19
Mamestra, 12
Marasmalus, 28
Marmorinia, 47
Matigramma, 46
Megachyta, 48
Meghypena, 52
Melaporphyria, 33
Melicleptria, 34
Melipotis, 40
Metoponia, 37
Miana, 16, 37
Microcoelia, 9
Miselia, 15
Moma, 7
Monodes, 22
Monogona, 29
Morrisonia, 53
Mythimna, 24
Mythimna, 21
Naenia, 18
Nephelodes, 18
Noctua, 9, 10, 11
Nonagria, 19
Ochria, 19
Ogygia, 10
Ommatostola, 20
Oncocnemis, 13
Ophiusa, 39
Oraesia, 29
Oria, 33
Orthodes, 23
Orthosia, 25
Pachnobia, 23

Page.
Pachypolia, 14
Palthis, 50
Pangrapta, 47
Panopoda, 44
Panula, 39
Parallelia, 38
Parthenos, 41
Perigea, 16
Phalaenophana, 50
Phalaenostola, 47
Pheocyma, 45
Philochrysa, 20
Philometra, 49
Philomma, 33
Phlogophora, 17
Phoberia, 39
Phosphila, 15
Phurys, 39
Phyprosopus, 29
Pityolita, 48
Poaphila, 38
Placodes, 30
Plagiomimicus, 32
Ptatysenta, 20
Pleonectopoda, 11
Pleonectyptera, 44
Plusia, 30
Plusiodonta, 23
Polia, 14
Polygrammate, 9
Prodenia, 17
Pseudaglossa, 47
Pseudanthracia, 46
Pseudothyatira, 5
Pteraetholix, 23
Pyrophila, 22
Pyrrhia, 35
Raphia, 6
Remigia, 44
Renia, 50
Rhodophora, 33
Ripogenus, 50
Saligena, 6
Schinia, 32

Page.
Scolecocampa, 20
Scoliopteryx, 26
Scopelosoma, 26
Senta, 20
Septis, 28
Sisyrhypena, 49
Spargaloma, 46
Spiloloma, 43
Stibadium, 32
Stictoptera, 39
Stiria, 32
Sudariophora, 29
Sylectra, 47
Sympistis, 32
Syneda, 40
Taeniocampa, 23
Tamila, 35
Tarache, 36
Telesilla, 30

Page.
Teratocera, 47
Tetanolita, 49
Thalpochares, 36
Tortricodes, 52
Tricopis, 34
Trigonophora, 17
Ufeus, 21
Valeria, 14
Xanthia, 25
Xestia, 25
Xanthoptera, 36
Xylina, 26, 27
Xylomiges, 27
Xylophasia, 15, 16
Ypsia, 45
Zale, 46
Zanclognatha, 48
Zosteropoda, 22
Zotheca, 23

DESCRIPTIONS.

Feralia, n. g.

The eyes are small, naked, with lashes. The genus thus differs at once from the European Dipthera (*ludifica*), in which the eyes are hairy. The palpi are very short, not long as in Moma. The male antennae are shortly pectinate throughout their length. The thorax has a central crest. The species are green colored, and, though smaller, in appearance resemble the European Dichonia aprilina, from which they differ structually by the absence of the enlargement of the fore tibiae. In the typical species, *jocosa*, after a careful examination, I cannot find ocelli. The body is shaggily haired, and the habitus recalls Harrisimemna.

(1.) Feralia jocosa (*Guen.*).

♂.—The eyes are smaller than in the succeeding species and I do not find ocelli. The antennae are shortly pectinate, the vestiture shaggy, the head sunken in the prothorax, the palpi very short. Bright, somewhat bluish green; primaries with the transverse lines double, black, with white centers, waved, dentate or irregular, in general appearance as in *D. aprilina*. Reniform concolorous, very large, with black and white annuli; orbicular also concolorous and well sized and beneath this the large claviform may be told by its marginal lines which are similar to those of the other spots. *No subterminal line*; this line being merely indicated by a black blotch at internal angle and a similar mark on costa. A row of small terminal interspaceal black and white dots, opposite to which the fringes are broadly black-checked. Hind wings blackish, concolorous; beneath paler, whitish, soiled with blackish, with distinct black discal mark and exterior band, and a strongly marked terminal line. On the blackish primaries the terminal space is light green. Antennae testaceous; head and thorax like primaries, marked with black. Sides of the face and palpi laterally with black hairs. Feet dotted black and white.

Expanse, 37 m. m. Ithaca, Mr. J. H. Comstock, No. 412.

In this species the costa is uninterruptedly marked with black and white from the inception of the t. a. line to apex. The space between the discal spots is slightly powdered with black scales, a character that may be variable.

(2.) **Feralia Comstocki,** *Grote.*

♂.—The eyes are relatively a little larger than in *jocosa,* and the ocelli are visible. The antennae are as in *jocosa,* while the body is less pilose. The whole insect resembles *Moma fallax* quite closely, but may be separated by the *short labial palpi,* and the pectinate antennae. Rather light bright green with the spots indistinctly margined, large. Between the ordinary spots the cell is black. The t. a. line and basal line are black and white, incomplete, subcontinuous. The space beyond the reniform and inferiorly on the median space to the submedian fold is black. The t. p. line is indicated by black shades which commence on costa near the apex, narrowing the pale green terminal space which wants the usual terminal dots. Hind wings pale green, soiled with fuscous, with a vague band and discal spot. Beneath both wings pale green, the markings vague, powdery, reflecting the markings of the upper surface.

Expanse, 34 m. m. Mr. J. H. Comstock, Ithaca, N. Y., No. 2.

In my specimen the fringes are defective so that I cannot describe them. This species resembles Moma fallax, at first sight very closely, the t. a. and basal lines on the primaries are linear and subcontinuous, and the ordinary spots more clearly marked. It is generically distinct by the very short palpi and the pectinate antennae. It is not improbable that it is Guenée's var. A of *jocosa*; and if so the specimen which I examined in the British Museum in 1868, and which is probably the type of Guenée's var. A, belongs to F.

Comstocki. I thought this specimen to be a variety of **Moma fallax**, but at that time I was unprepared to recognize a species closely resembling M. fallax, but differing structurally by the shorter palpi. From *F. jocosa,* the new species differs by the somewhat larger more prominent eyes, broader head, and thinner and shorter vestiture, as well as by the differences in ornamentation, which are very obvious. The vestiture is not so shaggy, and the head rather more prominent. The costal region is not black and white marked, as it is in *F. jocosa,* and the orbicular is relatively smaller, while the hind wings differ greatly in appearance. All these characters appear to fall in with what Guenée says of his variety of *jocosa,* which seemed to him to have the air of a distinct species. The differences which separate the two forms are, however, probably of sufficient importance to warrant separate generic designations.

(3.) **Feralia februalis,** *Grote.*

♀.—A beautiful species of the size of *F. jocosa,* but more nearly resembling the European *Dichonia aprilina,* from the stouter thorax and more fusiform abdomen. Ornamentation of the primaries like *F. jocosa.* Bright apple green. The median transverse lines black, lunulated, with white edging. Ordinary spots large, concolorous, not completely defined, with white and black edging like the lines. Median shade black, narrow, dentate, not as obvious as in *D. aprilina,* and the Californian species wants the longitudinal black dash on submedian fold. The true subterminal line is very faint, white, irregular, not as in *D. aprilina,* with black marks, but with black sinuate streaks on costa, and on internal margin. A distinct, lobed, anteterminal white shade band, which is removed from the margin, and looks as if it were the subterminal line itself, followed by the green ground color; in *aprilina* this lobing is greenish, and the narrow terminal edge of the wing black between the lobes. The presence of these white lines or bands between the t. p. line and the terminal edge of the wing distinguishes the Californian species from *F. jocosa.* Fringes distinctly chequered, black and white. Hind wings pale whitish green with concolorous fringes, and two faint transverse lines hardly more than reflected from beneath where they are distinct and divaricate, and where there is a distinct discal mark. Fore wings beneath whitish green with distinct black costal marks, those opposite the inception of the subterminal most distinct. Thorax bright green with black marks. Abdomen somewhat fuscous, with very slight tufts, anal hairs green. Not improbably to be generically separated from *F. jocosa*; the ♂ is not known to me, and the species seems to agree in many characters with *F. jocosa,* while differing from *Dichonia* by the not swollen fore tibiae, more hairy vestiture and shorter palpi.

Expanse, 35 m. m. Sanzalito, February 12, Mr. Behrens. Collection of this Society.

(4.) Agrotis phyllophora, *Grote.*

♂.—A large handsome lilac-rosy colored species. All the tibiae spinose. Antennae impectinate, brush-like, with a single stouter ray on each side of each joint. *A. phyllophora* has a slight resemblance to *A. subrosea*, but belongs, from the ♂ antennal structure, to a different section of the genus. Fore wings purple red. All the lines widely geminate, of a darker red, tolerably distinct and sub-continuous. Basal half line distinct, with the nearly perpendicular wavy t. a. line widely geminate. No claviform spot. Orbicular and reniform concolorous, vaguely outlined, paler against the more deeply red shading of the discal cell. The slightly extended t. p. line is followed by blackish and pale points on the more deeply red tinted subterminal space. The irregular subterminal line appears by contrast between the latter and the paler terminal space, which is concolorous with the rest of the wing. Hind wings fuscous without bands or marks; fringes yellowish. Abdomen fuscous with yellowish anal hairs; thorax and head like fore wings; head above and palpi more brownish red; terminal palpal joint, front and thorax paler. Beneath the paler red-dusted hind wings show a vague dark fuscous median line accented on the veins. From *triangulum* and allies this species is at once separated by the armed fore tibiae.

Expanse, 40 to 42 m. m. Two specimens, New York, Canada.

(5.) Agrotis formalis, *Grote.*

♂.—An exceedingly dark and beautiful species, with silky squamation and somewhat flattened form, and allied to our eastern *A. collaris* and *A. geniculata*. Middle and hind tibiae alone spinose. Dark intense blackish brown. The collar has a narrow central pure white line, *above* which the prothoracic pieces are velvety black. Primaries with the costal edge broadly dark ashen to the inception of the t. p. line, absorbing the superior portion of the orbicular spot. Reniform grey, like the costal edge, moderate, with faint dark internal ring. Ordinary lines geminate, fine, not very distinct or complete, black. The t. a. line waved, nearly perpendicular. The basal half-line visible on the gray costal edge. The t. p. line roundedly but not greatly exserted opposite the cell, followed by minute black and white points on the subterminal space. Median space with a more ruddy brown tinge than the rest of the wing and like the thorax and tegulae. The faintly pale subterminal line is shaded with brown and the dark fringes are brown at base and show a faint interior line. Hind wings blackish without marks, with white-tipped fuscous fringes that show a broad interior line. Abdomen blackish. Beneath the wings are a little paler, irrorate, with a rather distinct blackish common line and black discal mark on the hind wings.

Expanse, 35 m. m. One fresh specimen, Mr. Behrens, California. Coll. of this Society.

(6.) **Agrotis Wilsoni,** *Grote,* Bul. Buf. Soc. N. S. 1 p. 135, Pl. 4, fig. 3 (Nos. 13 and 24, Mr. Behrens, California).

I have now received a series of this fine species which is subject to considerable variation. My original description and figure illustrate the form in which the costal region and subterminal space are not differentiated by a paler color. The more usual form resembles *sexatilis* or *subgothica,* on account of the paler coloration of the costal region of primaries.

♂ ♀.—Eyes naked; all the tibiae spinose. ♂ Antennae brush-like, in the ♀ the antennae are pubescent beneath with single longer setae on the joints. Size rather stout, color olivaceous. Fore wings with the basal, median and terminal spaces deep olivaceous, varying in depth of color, darkest when the costal region and subterminal space are palest. T. a. line usually distinct, twice bent, pale centered, obsoletely geminate. Claviform concolorous, rather large, sometimes indistinct. On the median space the ordinary spots are blackish, more or less covered with pale scales, with a distinct inner pale annulet lining the external dark defining lines, which latter are sometimes inconspicuous; reniform upright, attenuate; orbicular oblique, spherical or oblong. Costal region and subterminal space varying in tint; sometimes violently contrasting by their pallor, again with the rest of the wing olivaceous; intermediate specimens have the costal region of the wing obscure grayish. In some specimens there are ferruginous tints about the base of the wing and again before the inception of the subterminal line; such specimens are the darker and more concolorous. Hind wings with a very distinct comma mark, fuscous above in ♀, paler at base in ♂, in both sexes pale beneath with the discal mark black and attenuate inferiorly; fringes white. The fore wings have the fringes darker with an incomplete interior line. Thorax olivaceous; collar paler at base; palpi pale with the second joint marked with blackish outwardly.

Average expanse, 38 m. m.

This species may always be distinguished by its distinct olivaceous and ochery colors. It is very much larger than *A. pitychrous* and the Colorado species described by me which are nearest to it in this respect. Coll. of this Society.

(7.) **Agrotis specialis,** *Grote.*

♂.—Antennae with tufts of bristles on the joints. Eyes naked; all the tibiae spinose. Bright reddish brown. Fore wings bright reddish brown with the median space darker, the narrrw uneven terminal field blackish. Claviform outlined as in *A. Wilsoni,* and the median lines much as in that species. Ordinary spots contrasting, pale, powdery over a dark ground, of the usual shape. Terminal dots distinct; fringes dark. Hind wings pale fuscous, hardly paler basally, with white faintly lined fringes. Beneath very pale, nearly white; hind wings with slight discal mark and powdered on the costal region with dark scales. Fore wings darker with dark fringes and terminal dots distinct. Thorax and head above vinous brown; abdomen pale fuscous.

Expanse, 38 m. m.

One bred specimen, Mr. Behrens. Allied to A. Wilsoni, but readily distinguished by its deep and rich red brown color and the difference in antennal structure. California. Coll. of this Society.

Adita, n. g.

The head is prominent, eyes large, naked, with lashes. Antennae long, in the ♂ strongly bipectinate to the tips. All the tibiae are spinose; in addition the fore tibiae are provided with a stout claw as in Oncocnemis. Collar slightly elevated in front; thorax crested behind. Abdomen untufted, exceeding the hind wings. Fore wings broad, retreating at internal angles. The moth is rather stout and well sized, and in its strong structural characters seem to fall in between Agrotis and Mamestra.

Since Abbot illustrated the species in 1797, it has remained unnoticed by any author to my knowledge. The male is now for the first time described.

(8.) Adita Chionanthi (*Abb. & Sm.*).

♂.—Blackish gray, the costal region, ordinary spots and terminal space shaded with whitish gray. Basal half-line, black, distinct, erect. Median lines black, approximate, narrowing the median space below the median vein. Claviform black margined, small. T. a. line even, a little irregular at costa, slightly arcuate. Orbicular moderate, black ringed, rounded, whitish with a dark central stain. Median shade blackish, rivulous. T. p. line exserted over the nervules, skirting the large reniform inferiorly and running inwardly from vein 4. The line is very inconspicuously lunulate, nearly even. Subterminal shade line ragged, indicated by the differences in color between the subterminal and terminal spaces. A strong decided black dash on the interspace between veins 2 and 3, crossing the s. t. line. Fringes fuscous, obsoletely interrupted with whitish; a narrow black terminal line. Hind wings pellucid whitish, soiled with fuscous and with an indistinct median line; fringes whitish. Thorax like wings; collar with a black line.

Expanse, 42 m. m. Ithaca, N. Y., Mr. J. H. Comstock, No. 30.

(9.) Mamestra puerilis, *Grote.*

♂ ♀.—Size small. Eyes hairy. Tibiae all unarmed. Thorax and abdomen, indistinctly tufted. Labial palpi rather prominent. Color of *Mamestra lorea*, varying from bright to dusky ochreous; some specimens are quite dusky with blackish hind wings. On the primaries the lines are narrow, faint and nearly perpendicular; the t. a. line waved outwardly four times; the t. p. line marked with fine black points on the veins, not roundedly exserted opposite the cell, but running here parallel with the erect and distinct subterminal line. Median shade angulated, variably apparent. Reniform either white or reddish, and this independent of the general tone of the wing, so that a resemblance to *Hydroecia nictitans*, becomes noticeable; when white with an included inferior black stain or dot. Orbicular minute, black ringed with white center, or inconspicuous in those specimens with reddish reniform; fringes darker than the wing; terminal line more or less continuous. Hind wings blackish with the costal regions and fringes ochreous in the more reddish specimens. Beneath with distinct double exterior lines on the fore wings; secondaries with broad blackish median band and discal mark. The oviduct is not apparent beyond the abdominal tip.

Expanse, 27 m. m. A number of specimens from Mendocino, California, taken in June, are sent by Mr. Behrens under the No. 8. I have examined also specimens sent from California by Mr. Hy. Edwards.

(10.) Dianthoecia leucogramma, *Grote,* Bul. Buf. Soc. N. S. 1, p. 140.

♂.—Mr. Behrens sends a single fresh specimen in which the pale dots following the subterminal black cuneiform marks are not at all yellowish. The ♀ is still unknown to me. California. Collection of this Society.

(11.) Dianthoecia rufula, *Grote.*

♂ ♀.—Eyes hairy, with lashes. Male antennae brush-like, with a longer bristle on each side of each joint. The oviduct is exserted. The abdominal tuftings are obsolete. In color the species resembles *Mamestra puerilis.* It is pale reddish ochery, variable in redness. Ordinary spots concolorous with fine pale annuli; the orbicular rather large, oblique; the reniform erect, with darker, partly blackish center, and is the more noticeable. The lines fine and indistinct. The t. p. line is followed by a distinct series of black and pale points. Subterminal line continued, erect, finely pale margined outwardly. Fringes concolorous. Hind wings quite pale testaceous, stained with fuscous on the veins and hind border, with concolorous pale fringes. Beneath both wings very pale with an exterior transverse denticulate line on primaries continued to vein 2; a faint fuscous discal shade and mark. Hind wings with a median line marked on the nervules and discal point, with the costal region sprinkled with darker scales. Head and thorax above like primaries.

Expanse, ♂ 30, ♀ 34 m. m. "Oakland, No. 22," Mr. Behrens.

(12.) Dianthoecia insolens, *Grote.*

♀.—A large species with hairy eyes and the oviduct barely visible. It is a species of singular appearance, and resembles the European *D. caesia* and the European species of *Polia* (such as *nigrocincta* H.-S. fig. 482). Hoary gray over fuscous the markings faint, with a tinge of yellow accompanying the large concolorous ordinary spots and the transverse lines. The narrow terminal space and the median, a little freer than the rest of the wing from pale scales. Subterminal line preceded by large and vague fuscous cuneiform marks. Terminal black dots distinct. Fringes fuscous and pale with a whitish basal line. Hind wings fuscous with a median shade line and pale fringes, Body parts concolorous with the wings. Beneath whitish, very sparsely irrorate with dark scales; a common undulating fuscous line and indistinct discal mark on hind wings.

Expanse, 50 m. m. Two fresh specimens, California, Mr. Behrens, without number. Collection of this Society.

(13.) Oncocnemis Behrensi, *Grote.*

♂ ♀.—Eyes naked, with lashes. Fore tibiae with a claw, else the tibiae unarmed. Collar rather wide and slightly produced in front. Size of the European O. confusa, *H.-S.* figs. 44, 45, and evidently exceedingly near that species. Apparently a darker species, and without so apparent a yellowish tint on the fore wings and none on the hind wings, which have broad fuscous borders, soiled veins and whitish bases with slight discal marks. Beneath evidently darker, peppered with black dots, and with the primaries wholly fuscous. The fore wings above are dark fuscous with an even neutral yellowish tinge; lines fine, black, waved and double. Ordinary spots concolorous, rounded, reniform with a blackish stain. Median shade line nearly perpendicular, angulated back to costa above the reniform. Median space wide, the t. p. line roundedly exserted much beyond the cell, approaching the subterminal line, the latter of the dull yellowish tinge of the wing preceded by irregularly sized black cuneiform marks unequally distinct. Fringes fuscous, dotted with black. Head and thorax above like fore wings, coarsely peppered with black scales.

Expanse, 32 to 33 m. m. "Sanzalito, February 10 to 14, Mr. Behrens, Nos. 14 and 29 (under the latter number a paler, probably somewhat worn specimen is sent). Several specimens, very fresh and perfect. This is very different from the species of Oncocnemis described by me from Colorado. Its resemblance to the Russian O. cònfusa, instances the relationship of the Californian fauna. Col. Buf. Soc. Nat. Sci.

Chytonix,[28] n. g.

The eyes are naked, with lashes. Antennae simple, pubescent, slender. The form is frail; the vestiture of the thorax is composed of flattened scales with a slight admixture of hair; dorsum of the abdomen strongly tufted centrally. Primaries wide, with retreating inner angle. The genus differs from Hadena by the vestiture of the thorax which is not hairy but scaley. The species is fragile and seems to me related to *Homohadena badistriga*. The ornamentation, while peculiar, still recalls that species and the thoracic vestiture is similar in character, while the shape of the wings and the dorsal body tufts afford characters of structural dissimilarity.

(14.) **Chytonix iaspis** (*Guenée*).

♂.—The body is slender. Antennae thin and pubescent beneath. Abdomen strongly tufted. Wings ample. Primaries pale brown. T. a. line broad, dark brown, nearly even, outwardly oblique. Median space wide owing to the course of the fine and double t. p. line, which is widely and roundedly exserted over the nervules and runs gradually inwardly to internal margin where the two lines approach, and towards which the median space gradually narrows. A deep blackish brown broad shade on the submedian fold runs across the median space and includes just before the t. p. line a well defined *snow-white* spot. Ordinary spots large concolorous, double ringed. The terminal space is very narrow, even, darker than the pale brown shades which precede the pale irregular subterminal line. Terminal blackish brown line very distinct, sub-continuous; fringes dark, narrowly cut with pale. Hind wings fuscous with pale fringes. Beneath pale whitish fuscous with a discal dot and a rivulous median line on hind wings.

Expanse, 26 m. m. Ithaca, N. Y., J. H. Comstock.

(15.) **Hadena genialis**, *Grote.*

♂.—Allied to *H. lignicolor* and *H. lithoxylea*, but a stouter and heavier species. The whole insect is of an even dull orange brown, hence there are no ferruginous shades or streaks on the primaries as in *lignicolor*. Ordinary spots concolorous, hardly perceivable, with pale annuli; reniform a little smaller and more excavate, orbicular notably more elongate than in *lignicolor* and attaining the reniform or very nearly so. T. p. line pale, hardly perceivable. On the terminal space near internal angle vein 1, the submedian fold and vein 2 are streaked with lead color, as are also veins 5 and 6 opposite the cell. The paler dentate fringes show a darker basal line. Hind wings orange fuscous, nearly concolorous with four wings; beneath the general color is a little brighter than above, on the hind wings a discal dot and line; on the primaries double faint exterior lines are perceivable with some whitish scales on costa and following the outer line at its inception. Body parts concolorous with the wings.

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[28] Gr.: χυτος et νίψ.

Expanse, 45 m. m. Mr. Behrens, California, No. 7. Collection of this Society.

(16.) Hadena marina, *Grote.*

Allied to H. miselioides, *Guen.*, but the body is much stouter and on the primaries the reniform is only half the size, while the transverse posterior line is regularly lunulated. Dark green over black. Ordinary spots white with green centers, moderate, subequal; the orbicular oblique, the reniform erect, slightly medially constricted. Median lines black, approaching at submedian fold where the median space is black, the t. a. line waved, the t. p. line interspaceally lunulate, the veins beyond marked with black. Subterminal line brought near the margin, picked out by whitish scales more continuously above internal angle. Terminal black marks coarse and distinct, fringes dark, with a black line. Hind wings fuscous with terminal dark line and faint indications of two transverse shade lines; beneath paler, irrorate, with a large blackish discal mark and exterior transverse line. Thorax dark mossy green like the primaries; abdomen like hind wings; beneath blackish fuscous. Head rather small; eyes naked; maxillae pale testaceous.

Expanse, 32 m. m. Mr. Behrens, California. Collection of this Society.

Zosteropoda,[29] n. g.

A singular genus with narrow wings and linear body parts recalling, in its colors, Xanthia, but with extraordinarily tufted middle and hind legs. The antennae (♂) are long and pubescent with two longer setae on each joint. The eyes are naked. The maxillae long and stout. The palpi long, exceeding the front, with rather long and prominent terminal joint. The fore wings are narrow, of equal width, with parallel margins and slightly produced apices. The hind wings show a singular fringing of longer scales *above*, along the internal, median and subcostal nervures. The middle and hind tibiae are thickly tufted, especially the latter, which show an inwardly projecting lengthy and discolorous tuft. The abdomen is pointed terminally, without dorsal tufts, is narrow and exceeds the hind wings in length. In the shape of the primaries and by the tufted legs, a relationship with Heliophila pseudargyria is evidenced.

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[29] Gr.: *ζωστήρ* et *ποῦς*.

(17.) **Zosteropoda hirtipes,** *Grote.*

♂.—Yellow. Fore wings orange yellow with the two median lines of a deeper tint and distinct, both outwardly projected on the cell and thence returning obliquely to internal margin, subparallel. Reniform indicated by a dot. Hind wings yellowish white, with the longer fringings to the veins bright testaçeous. Body concolorous; tibial tufts dusky. The ornamentation is simple; fringes concolorous and both wings show a very narrow terminal indistinct dark hair line. Beneath yellow with faint discal points and common line. The head and thorax are brighter tinged with the fore wings.

Expanse, 28 m. m. *Habitat,* California (Hy. Edwards, No. 3484).

(18.) **Pachnobia cornuta,** *Grote.*

♂.—Eyes naked; middle and hind tibiae spinose. Short bodied and plump with rather long, shortly pectinate and bristled antennae. Red on vinous brown. Vertex and the broad collar discolorous, pale or buff, the latter with fine lines. Head tufted between the antennae. Thorax dark red brown. Primaries red brown, shaded with pale scales along costal region. Ordinary spots pale, narrow, elongate, fused, the orbicular nearly parallel with costa, the reniform upright, with fine brown internal ring. Ordinary lines pale between incomplete dark lines; the t. a. line notably waved below median vein; the t. p. line obsoletely lunulate, appearing nearly even, roundedly exserted beyond the cell. Subterminal line preceded by blackish detached marks. Median space deeper colored on the cell. Fringes paler brown with a faint interior whitish line. Hind wings brownish fuscous, with paler yellow brown fringes. Beneath more reddish, irrorate, with distinct black discal mark on hind wings and common dark line. Feet dotted with pale scales.

Expanse, 29 m. m. Two fresh specimens, Mr. Behrens, No. 1. Col. Buf. Soc. Nat. Sci.

Zotheca,[30] n. g.

Allied to Calymnia and Enargia (Cosmia *Led.*) and apparently very near the latter, but differing by the simple and merely pubescent male antennae, the wider primaries, and by the more sunken head. Whether the ♀ oviduct is exserted or not cannot be now ascertained in the absence of specimens of that sex. The eyes are naked. The thorax square and woolly, without tufts; the head is depressed and hardly visible from above. The abdomen seems to be as in Calymnia and shorter than in Enargia, with longer lateral hair. The size is larger than Cosmia, but inferior to Enargia (*palleacea*) and the ornamentation differs by the obliquity and projection of the t. p. line, which alone is evident. The species reminds us of Choephora.

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[30] Gr.: *ζωθήκη.*

(19.) Zotheca tranquilla, *Grote.*

♂.—The color is a dusty pale brownish red, and the fore wings have a powdery look. The t. a. line is obsolete, as is the orbicular spot. The reniform is hardly to be made out, narrow and concolorous. The t. p. line is distinct, darker than the wing, much outwardly projected on vein 6, single, followed by a faintly paler shade, running inwardly obliquely and a little flexed to internal margin; s. t. line wanting; fringes darker than the wing. The median space is darker clouded centrally. Hind wings whitish faintly powdered with reddish outwardly, and with pale reddish fringes. The costal region of primaries, above the t. p. line before the apex, is darker shaded, and here the costal edge shows paler anteapical dots. Beneath both wings are whitish powdered with reddish along costal regions and outwardly, and showing the commencements of a common outer transverse line; on the primaries the narrow reniform is reflected. Body concolorous, with wings; the woolly thorax shows an underlying yellowish tint.

Expanse, 34 to 36 m. m. *Habitat,* California (Hy. Edwards, No. 160).

(20.) Scopelosoma Graefiana, *Grote.*

♂.—The eyes are naked; the body flattened; the squamation rough as in this genus, not smooth as in Glaea. The wings are elongate, the terminal line distinctly waved on the primaries, so that the fringes are uneven. The fore wings are narrow and long, with parallel margins and sharp apices. The ornamentation is different from either *Walkeri* or *vinulenta,* and the colors are as in some species of Xanthia, but I cannot separate this and the following species generically from either of the other species here referred to Scopelosoma. Yellow, powdered with deep orange. The fore wings are crossed by four nearly equidistant and straight, dark orange brown, even and distinct lines. The first of these is the basal half-line, angulated on the median vein. The second is the t. a. line, nearly straight. The third is the median shade, unusually distinct and continued, margining inwardly the reniform. The fourth is the t. p. line shortly projected outwardly at costa, narrow, darker than the rest, even and a little inwardly oblique. The ordinary spots are concolorous, with complete orange annuli, the orbicular moderate and spherical, the reniform large, with a faint inferior stain, outwardly excavate. The subterminal line is irregular and faint. The nervules are marked with dark scales. The hind wings are light yellowish with an orange cast which leaves the costal region free. A faint median line reflected from beneath; fringes pale. Beneath pale yellowish with a distinct continued orange line, a little irregular on hind wings which show a discal dot. Costa of fore wings touched with dusky towards the tips. Terminal irregular line accented, dark and fine on both wings. Body parts beneath pale yellowish; above the thorax and head with the fore tibiae are dusky orange.

Expanse, 36 m. m. New York (col. this Soc. and E. L. Graef).

(21.) Scopelosoma ceromatica, *Grote.*

♀.—This species has broader wings than S. Graefiana, widening more outwardly, and shorter, and more as in Glaea. The male antennae are more noticibly ciliate. The ornamentation resembles that of S. Graefina. The color is an intensely vivid orange red. The fore wings show the lines distinctly, but these are hardly deeper than the ground color of the wings; their course is much as in S. Graefiana, but the t. p. is slightly lunulated. There is a remarkable powdering of pale scales over the wings wanting on the median space beyond the median shade and accompanying on the terminal space peculiar broad black shades on the veins. The ordinary spots are as in S. Graefiana; the orbicular difficult to make out and small, relieved by pale scales; the reniform concolorous, with a blackish inferior stain. Terminal line faintly waved, fringes concolorous, long and nearly even. Thorax and head colored like fore wings. Hind wings vinous orange with the costa pale, the median line from beneath seems reflected; a narrow terminal yellow shade obtains before the concolorous fringes. Beneath yellowish with a vinous tinge, especially over the fringes and at apex of fore wings. A common line and on hind wings a discal dot. Terminal line fine and lunulated on both wings which are more or less irrorate with red scales. Legs outwardly deep orange red. Abdomen above like hind wings. The costal region of primaries beneath shows a faint powdering of black scales.

Expanse, 32 m. m. New Jersey (E. L. Graef, raised from the larva).

(22.) Scopelosoma vinulenta.

Mr. H. K. Morrison has drawn my attention to the fact that I have erroneously regarded this species as the same as Guenée *S. sidus.* The type of *vinulenta* is before me. I have seen but two specimens from Texas (Cresson), New York (Lintner). It is a dull vinous blood-red species, nearly as intensely colored as *S. ceromatica.* The markings are much as in *S. satelletia,* the basal, t. a and t. p. lines accompanied by pale purplish shades and tolerably distinct; the reniform a narrow white lunule with superior and inferior white dots, again deeper stained than the wing. The costal edge of fore wings is *straight,* apices pointed.

Expanse, 36 m. m.

(23.) Scopelosoma Morrisoni, *Grote.*

I have received this species from Canada (Mr. Pettit) and from Cambridge (Mr. Morrison), the latter with the erroneous determination *S. Walkeri.* This species is of the color of *S. Walkeri,* but differs at once by the *even,* pale shaded distinct median lines on the fore wings, which latter are of a rusty olivaceous ochreous. The reniform appears merely as a pale luniform mark looking of a piece with the t. p. line. This latter in *S. Walkeri* is dark, single, narrow, irregular or wavy, or a little interspaceally notched over the median nervules. Hind wings blackish, with fringes like the fore wings and thorax in color. Beneath like the fore wings above, irrorate with black scales, with distinct blackish discal spot and median band, the latter centrally more deeply indented than usual. Costal edge of primaries straight.

Expanse, 38 m. m.

(24.) Scopelosoma Walkeri.

I have my type before me and it agrees with the specimens taken about Buffalo before alluded to in this Bulletin. The color is dusky olivaceous ochreous and the reniform is white or whitish ochreous; again the color is more rusty and the spot reddish. The costal edge is straight. It appears to differ essentially from *S. sidus* in this particular, though the color is not the same. The narrow blackish t. p. line has been before described.

(25.) Scopelosoma sidus.

Mr. H. K. Morrison sends me a specimen with this determination and I find a second among my material of *S. Walkeri* taken about Buffalo. On comparison the color of the primaries is seen to be of a dusty pale brick red, the median lines distinct, blackish and as in *S. Walkeri* and *S. satellitia;* I have little doubt then that this is Guenée's species. The costa of the primaries is less straight, more arched than in the other species, and the median space is narrower, owing to the greater proximity of the median lines. All the species are nearly allied but can be readily distinguished by the characters pointed out; my only doubt is as to the specific validity of the distinction between this species and *S. Walkeri*, yet the characters afford good reason for a separate designation.

(26.) Xylomiges hiemalis, *Grote.*

♂ ♀.—This species has hairy eyes and in the shape of the wings is like *X. curialis*. The ornamentation recalls that of Mamestra latex (*Guen.*), than which this is a narrower species, the abdomen with a basal tuft, the thorax uncrested. The ♂ antennae are provided with bristled pectinations, the joints bead-like. The female antennae are simple, brush-like. Gray, shaded with blackish, with a warm tinge, the markings on the primaries distinct. A black basal dash, above which the base is pale. T. a. line black, double, the gray center alone noticable, not very irregular or much waved. Orbicular large, rounded, with incomplete black annulus, gray with a faint blackish dot. Reniform dark, upright, with a distinct reddish stain, a narrow black annulus inside of which is a gray ring, the center dark. T. p. line indistinct. Subterminal line whitish gray, preceded by uneven black cuneiform mark, cut by gray shades accompanying veins 3 and 4, and followed by interspaceal black marks. Terminal black interspaceal marks distinct. Hind wings whitish gray, irrorate with fuscous, with longer fuscous hairs over internal margin, with blackish discal dot and median line more apparent in ♂, and concolorous fringes before which the terminal black line is subcontinuous and very distinct; beneath as above, the black discal dot very distinct and the line marked on the veins.

Expanse, 34 m. m.

Three specimens sent by Mr, Behrens under the number 11, and labelled "Oakland, January." A single specimen bears the number "625, California." Both *Xylomiges curialis* and *X. patalis* are again sent me by Mr. Behrens; specimens of the latter species are labelled "Mendocino."

(27.) Plusia bractea, *S. V.*

A specimen sent by Mr. Behrens with the label "Mendocino, June," cannot be specially separated from European material of the species in the collection of this Society.

(28.) Plusia 8-scripta, *Sanborn.*

A species allied to *P. mortuorum.* Blackish and steel gray, in some specimens a faint rufous shade on t. p. line near submedian fold. T. p. line perpendicular, geminate, waved or trembled, and offering thus a distinguishing feature from Guenée's species. The metallic spot incompletely 8-shaped, open superiorly, pale yellowish or silvery; t. a. line not silvery, as in *mortuorum*, zigzag, geminate. Reniform similar to *mortuorum* in shape, but without any silvery shading, margined with black, enclosing a very fine silvery line. Subterminal line much as in *mortuorum.* Terminal line black followed by a distinct pale gray marginal shade following the scollops of the line. Fringe alternately gray and black. Hind wings with a wide diffuse blackish border, else pale with a sort of dirty yellowish brown tinge, like *mortuorum.* Beneath with faint median line and spot.

Expanse, 35 m. m. Anticosti Island (Couper); Racine (O. Meske); Mass. (Prof. Packard). By a clerical error I have written the name "8-*signata*" on p. 72, Vol. 6, Can. Ent.

(29.) Plusia viridisigma, *Grote.*

Much larger than *P.* 8-*scripta*, not so much shaded with blackish, but of a dark bluish gray, with the lines and spots distinct. T. a. line geminate, nearly even, strongly defected on t. a. line. Sign much as in *P.* 8-*scripta*, bolder, of a peculiar greenish-golden hue—verdigris-like. Orbicular distinct, black ringed, annulus irregular, toothed on the inside, surrounded with a pale shade. Reniform narrow, upright, elongate, black ringed, with a very fine pale incomplete line. T. p. line not inflected, waved, geminate. Subterminal space darker, more blackish than terminal. Subterminal line very distinct, with the double dentations on the interspaces between veins 2 and 4, strongly expressed. Hind wings with broad diffuse blackish borders. Beneath pale, somewhat yellowish, with the markings improminent. Head and thorax dark gray, like fore wings. Collar and tegulae with distinct transverse black shade lines.

Expanse, 48 m. m. Quebec (F. X. Bélanger).

Stiria,[31] n. g.

A genus with strong characters which has its most natural position here. The color is bright yellow on the primaries, so that we are reminded strongly of Gortyna. The clypeus is remarkably full and exceeds the eyes; it has a heart-shaped, naked depression, not unlike that of Plagiomimicus, but with less prominently raised edges and with a moderate tubercle near its inferior and longer edge. The vestiture of the thorax and head is scaley, not hairy. The legs are unarmed except the short fore tibiae, which have a stout, blunt, terminal claw. The thorax is short with the extremities of the patagic squamae uplifted, and in its total appearance it is like that of Plagiomimicus. The thoracic squamation is dark, pearly dotted or frosted. The fore wings are large, wide, triangulate, with a Plusia-like tooth at internal angle. The female oviduct is exserted. The eyes are naked.

(30.) Stiria rugifrons, *Grote.*

The fore wings are light yellow, with a patch on internal margin at the base, a larger one centrally, and the narrow inwardly irregular edged terminal space, purply brown with a frosting of pale scales, and concolorous with the thorax. The ordinary lines and spots are obliterate, but there are some faint shaded marks on the cell and faint traces of the t. p. line. Fringes frosted and concolorous with the dark terminal space which narrows to apices, leaving these of the yellow ground color. Hind wings whitish, soiled outwardly, without lines. Beneath pale, without marks, primaries soiled, secondaries whitish.

Expanse, 44 m. m. Kansas (Prof. Snow, No. 5); Colorado Ter. (Jas. Ridings).

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[31] Gr.: στερεός.

Stibadium,[32] n. g.

Allied to Stiria, but with a strong external resemblance to Telesilla cinereola; larger than this species and recalling Gortyna nitela, in size, but with shorter body parts. The clypeus show a depression less prominent than in Stiria and without the tubercle, not so cup-like, and shallower than in Plagiomimicus. The wings not so large and triangulate as in Stiria, but more like Telesilla in their general shape. The legs are unarmed, except the short anterior tibiae, which have a strong claw. The color is that of Telesilla cinereola, a little darker and more olivaceous, thickly covered with pearly frostings. The ♀ oviduct is not exerted and there is no projection of the fringe at internal angle, as in Stiria. The eyes are naked.

(31.) **Stibadium spumosum,** *Grote.*

♂.—Color of *Telesilla cinereola,* but more olivaceous, thickly frosted. The two median lines white, the t. a. narrowest and less distinct. The t. p. line slightly projected and subangulated opposite the cell. The ordinary spots are concolorous, faint, vaguely outlined by white annuli of hair-like fineness, moderate, the reniform approximate to the t. p. line inferiorly. The subterminal space is paler and brighter tinted than the median, fringes concolorous. Terminal line dark, followed by a pale line at base of fringes. Thorax concolorous with the fore wings. Hind wings pale at base, fuscous outwardly; fringes pale fuscous with a paler basal shade. Beneath without markings; primaries dark, hind wings pale, whitish, with dark apical and costal cloudings.

Expanse, 35 m. m. Kansas (Prof. Snow, No. 63).

(32.) **Lygranthoecia saturata,** *Grote.*

♂ ♀.—Is of the same pearly olivaceous blackish with *L. marginata* and *L. Thoreaui* and rather resembles the former species, but the wings are evenly saturated with an ochreous reddish tint which is peculiar. The median white lines are not even as in *L. marginata,* but crenulated and, on the submedian fold, show two opposed dentations. Size of *L. marginata* and smaller than *L. Thoreaui,* with the median lines more obvious than in the latter species. The markings are much the same in the three species, but the median lines are not as approximate centrally in *L. saturata,* as in *L. Thoreaui,* and are less divergent on internal margin than in either of the other species. Hind wings fuscous, with darker terminal shade, saturated with same tint as primaries. Beneath more reddish; secondaries whitish, thickly powdered with orange red, with faint pale line and discal mark. Fore wings with transverse outer dark shade line and discal marks darker than hind wings.

Expanse, 26 m. m. Texas. Col. Am. Ent. Soc. (Belfrage), Mass. (H. K. Morrison).

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[32] Gr.: στιβάδιον.

(33.) **Melaporphyria immortua,** n. g. et sp.

Closely allied to Melicleptria. All the tibiae armed; the short fore tibiae with subequal terminal longer spines. Eyes small; front bulging without protuberance. The head is closely applied to the thorax, giving a different appearance to the insect from the species of Melicleptria. In size, the shape of the primaries and the length of the spurs, the species seems related to Heliaca. The ornamentation is not unlike the species referred by M. Guenée to Anthoecia, but yet differs sensibly. The ♀ abdomen does not show the oviduct extruded. The legs and face are more lengthily haired; the abdomen is smooth, without tufts and the wings have a velvety appearance. The colors are very dark, so that we are reminded of Melicleptria arcifera. The fore wings have the median lines fine, pale and even. The t. a. line forms an arc, much outwardly produced at the center. The t. p. line is oblique, nearly straight, a little sinuate, and is brought very nearly to the t. a. line medially. The median field is narrowed by the inwardly oblique course of the t. p. line, which thus differs here from its appearance in M. arcifera, Spraguei, etc., with which the species is similarly sized. The basal field is deep purple brown, becoming olivaceous before the t. a. line and there concolorous with the olivaceous brown or blackish subterminal field. Median space dusky brownish; all the veins marked by pale scales, and this latter character is especially noticeable on the subterminal space. The terminal space is lighter purply brown with a deeper shaded terminal line. There is merely a diffuse darker shade in the place of the reniform. Hind wings blackish at base, golden brown along terminal margin; the wing shows the brighter tint also as a faint median band. Fringes of the same golden brown at base, dusky tipped, as they are on primaries. Body parts olivaceous blackish. Beneath the wings are blackish at base, golden brown externally, the primaries the paler, and they show a common diffuse median blackish band, separated but slightly from the dark color of the base; fore wings with a golden brown discal spot.

Habitat, Albany (Mr. Lintner); Cambridge (Mr. Morrison).

Tricopis,[33] **n. g.**

In form allied to Tarache and with a similar clothing of flattened scales on the thorax. All the tibiae are armed and in addition the short fore tibiae have three unequal terminal claws, the longer on the inside. The eyes are naked. The bulging clypeus is thickly and mossily scaled, and the inferior clypeal plate is prominent. The outer margin of the fore wings is more oblique and the apices produced than in Tarache and Schinia. The abdomen is plump and untufted and the ovipositor is slightly extruded in the female. The ornamentation is not unlike that of the silver-flecked species of Cucullia.

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[33] Gr.: *τρεις* et *κοπίς*.

(34.) Tricopis chrysellus, *Grote.*

♂ ♀.—Head and thorax mixed pale and sable brown. Fore wings with the base narrowly brown, a median narrow transverse sable brown band outwardly bent on the cell and the terminal space narrowly brown. Else the wing is silvery white with a brilliant lustre. Fringes pale yellowish. Hind wings testaceous whitish with terminal fuscous clouding. Beneath white, the fore wings with dull blackish stains.

Expanse, 25 m. m. Collected in Texas by Belfrage; Kansas, Prof. F. H. Snow, No. 192.

Antiblemma, *Hübn.*

The body parts are slender and the form is geometridous. The head is small, the clypeus smooth. The squamation of the head and thorax shows a slight intermixture of hairs. The eyes are naked, reticulated, without lashes. The antennae are filiform, simple, scaled, pubescent beneath, with longer setae on each joint, the base slightly swelled. The ocelli are present. The maxillae are corneous, moderate. The labial palpi are of unusual length, compressed and rather lengthily scaled, extended forwards fully three times the length of the head; third joint slightly porrect, nearly half the length of the second. Legs slender, tibiae unarmed, with powdery squamation. Wings ample, concolorous; primaries with the apices acute, external margin full centrally, costal edge slightly arched; secondaries rounded, with the external margin a little depressed before the determinate anal angle. Judging from figures our species is allied to Antiblemma acclinalis *Hübn.*, from Surinam.

(35.) Antiblemma canalis, *Grote.*

♂.—The entire insect is dark brownish red. The wings show the t. p. line extended as a pale narrow common stripe angulated near the costa of primaries, as in the genera *Pleonectyptera* and *Anticarsia,* while the insect looks much more like a Geometer, belonging to *Drepanodes,* for example. The reniform is moderate, of a dark rich brown. The orbicular shows as a dark dot with a few whitish scales. The t. a. line and median shade are indicated on the costal region of primaries. A common subterminal series of pale and dark scale dots; fringes shorter, brighter tinted than the wing. Beneath paler with discal white and dark scale dots, and a common exterior darker, undulated shade line.

Expanse, 32 m. m. *Habitat,* New York (E. L. Graef, Esq., No. 539).

The following genus has been referred to the Herminidae by Dr. Clemens and redescribed under the name of *Deuterollyta* by Lederer, in 1863, as one of the Pyralidae, to which group I believe it to belong:

EPIPASCHIA, *Clemens* (1860).

Type: Epipaschia superatalis *Clem.*

† **superatalis** *Clem.*, Proc. Acad. Nat. Sci. Phil., 1860, p. 14.
borealis *Grote*, Bul. Buf. Soc. Nat. Sci. 1, p. 177 (*Deuterollyta*).
Eastern States.

EXPLANATION OF PLATE.

1. Dicopis muralis.
2. Platysenta atriciliata.
3. Jaspidea lepidula.
4. Senta defecta.
5. Lithophane querquera.
6. Copipanolis cubilis.
7. Anarta subfuscula.
8. Orthosia apiata.
9. Orthosia inulta.
10. Tricopis chrysellus.
11. Catocala semirelicta.

III. Catalogue of the Coleoptera from the Region of Lake Pontchartrain, La.

BY S. V. SUMMERS, M. D., NEW ORLEANS, LA.

[*Read before this Society, April* 10, 1874.]

THE following list will enumerate all the known Coleoptera occurring within the limits of what may be known as the "Region of Lake Pontchartrain, Louisiana": the list has been compiled from personal examinations of species in the possession of Mr. C. Trabrandt and in my own collection. I must also express here my obligations to Dr. Geo. H. Horn for determining many of the enumerated species. The classification of Dr. Le Conte with a few late modifications, has been followed. Many of the Louisiana species are among the rarest of the Coleoptera, *i. e.*, Casnonia ludoviciana, Zuphium americanum, Gymnetis Sallei, etc., and there still remains a large field for collections among the Dytiscidae and Staphylinidae. I would suggest for the latter family water, as the medium to be used in collecting, in bailing over the margin of streams; or, if fungi and animal excrement are to be searched, a pail two-thirds filled with water, will be found a valuable assistant.

CICINDELIDAE.

Megacephalini.

Tetracha carolina (*Linn.*).
    virginica (*Linn.*).

Cicindelini.

Cicindela rugifrons *Dej.*
    tranquebarica *Hb.*
    repanda *Dej.*

Cicindela media *Lec.* (*v.*).
    marginata *Fab.*
    tortuosa *Dej.*
    v. serpens *Lec.*
    punctulata *Fab.*
    v. micans *Fab.*
    severa *Laf.*
    Pilatei (*Guérin*).

CARABIDAE.

(Carabidae.)

Carabini.

ebria pallipes *Say.*
alosoma externum *Say.*
  scrutator (*Fab.*).
  Sayi *Dej.*
  frigidum *Kirby.*
  calidum (*Fab.*).
arabus limbatus *Say.*
  vinctus, *Weber.*
  sylvosus *Say.*
ychrus Lecontei (*Dej.*).
  Andrewsii *Harr.*

Scaritini.

asimachus marginatus (*Fab.*).
  sublaevis *Beauv.*
  punctulatus *Hld.*
  elongatus *Lec.*
arites subterraneus *Fab.*
  v. vicinus *Chd.*
  substriatus *Hald.*
yschirius globulosus *Say.*
  sphaericollis *Say.*
rdistomis viridis, *Say.*
spidoglossa subangulata *Chd.*
livina corvina *Putz.*
  ferrea *Lec.*
  bipustulata *Fab.*
  rufescens *Dej.*

(Harpalidae.)

Brachinini.

rachinus perplexus *Dej.*
  conformis *Dej.*
Brachinus lateralis *Dej.*
  alternans *Dej*
  tomentarius *Lec.*

Panagaeini.

Panagaeus crucigerus *Say.*
  fasciatus *Say.*

Morionini.

Morio monilicornis *Latr.*

Dryptini.

Galerita Janus *Fab.*
  Lecontei *Dej.*
  bicolor *Drury.*
Zuphium americanum *Dej.*
Thalpius dorsalis (*Brul.*).

Odacanthini.

Casnonia pensylvanica (*Linn.*).*
  ludoviciana (*Sallé*).
Leptotrachelus dorsalis (*Fab.*).†
Ega sallei *Chevr.*
Lachnophorus pubescens *Dej.*
Eucaerus varicornis *Lec.*

Lebini.

Loxopeza grandis (*Hentz*).
  atriventris (*Say*).
  tricolor (*Say*).
Lebia marginicollis *Dej.*
  v. affinis *Dej.*
  viridis *Say.*
  v. smaragdula *Dej.*
  pumila *Dej.*
  v. maculicornis *Lec.*

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* A single specimen found Feb. 4, 1874.

† Taken by Mr. C. Trabrandt.

- Lebia lobulata *Lec.*
  - viridipennis *Dej.*
  - ornata *Say.*
  - analis *Dej.*
  - furcata *Dej.*
- Dianchomena scapularis *Dej.*
- Aphelogenia vittata (*Fab.*).
  - bivittata (*Fab.*).
- Tetragonoderus fasciatus(*Hald.*).
- Blechrus linearis (*Lec.*)
- Apenes sinuata (*Say*).
- Pinacodera platicollis (*Say*).
  - v. fuscata (*Dej.*).

Pterostichini.

- Callida punctulata *Lec.*
- Rhombodera pallipes *Lec.*
- Calathus opaculus *Lec.*
  - mollis (*Mots.*). (La.?)*
- Platynus tenebricosus *Gemm.*
  - extensicollis (*Say*).
  - decorus (*Say*).
  - punctiformis (*Say*).
  - limbatus (*Say*).
  - crenistriatus *Lec.*
- Loxandrus rectus (*Say*).
  - erraticus (*Dej.*).
  - minor (*Chd.*).
  - taeniatus *Lec.*
- Evarthus americanus (*Dej.*).
  - colossus (*Lec.*).
- Pterostichus permundus (*Say*).
  - Sayi *Brullé.*
  - acutangulus *Chd.*
  - femoralis (*Kirby*).
- Amara avida (*Say*).
  - angustata *Say.*
- Amara impuncticollis (*Say*).
  - fallax *Lec.*

Licinini.

- Badister notatus *Hald.*
- Diplochila major *Lec.* (*v.*)
  - impressicollis *Dej.*
  - obtusa (*Lec.*).
  - laticollis (*Lec.*).
- Dicaelus purpuratus *Bon.*
  - ovalis *Lec.*
  - simplex *Dej.*
  - opacus *Laf.*
  - elongatus *Dej.*

Chlaenini.

- Anomoglossus pusillus (*Say*).
- Chlaenius erythropus *Germ.*
  - fuscicornis *Dej.*
  - rufipes *Dej.*
  - sericeus (*Forst.*).
  - pensylvanicus *Say.*
  - tricolor *Dej.*
  - brevilabris *Lec.*
  - circumcinctus *Say.*
  - impunctifrons *Say.*
  - niger *Rand.*
  - tomentosus (*Say*).

Oodini.

- Lachnocrepis parallelus (*Say*).
- Anatrichis minuta (*Dej.*).
- Oodes americanus *Dej.*
  - amaroides *Dej.*
  - texanus *Lec.*†
  - 14-striatus (*Chd.*).
  - Lecontei (*Chd.*).
  - cupraeus (*Chd.*).
- Evolenes impressus *Lec.*‡

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*From Dr. Arthur Wadgmar. I am not aware of this species occurring east of the Rocky Mountains in N. A.

† Taken by C. Trabrandt.

‡ Taken by Emanuel Frochammer.

Harpalini.

eopinus incrassatus (*Dej.*).
ratacanthus dubius (*Beauv.*)
gonoderus comma (*Fab.*).
  pallipes (*Fab.*).
  partiarius (*Say*).
  infuscatus *Dej.*
nisodactylus rusticus *Dej.*
  (Var's not studied.)
  coenus (*Say*).
  dulcicollis (*Laf.*).
nisotarsus terminatus (*Say*).
  piceus (*Lec.*).
radycellus rupestris (*Say*).
enolophus fuliginosus *Dej.*
  conjunctus *Say.*
  ochropezus *Say.*
  dissimilis *Dej.*
arpalus pensylvanicus (*Dej.*).
  nitidulus *Chd.*
  funestus *Lec.*
  ellipsis *Lec.*
Selenophorus stigmosus *Germ.*
  subtinctus *Lec.*
  pedicularius (*Dej.*).
  troglodytes (*Dej.*).

Pogonini.

Patrobus longicornis (*Say*).

Bembidiini.

Bembidium americanum *Dej.*
  dilatatum (*Lec.*).
  texanum *Lec.*
  fraternum *Lec.*
  variegatum *Say.*
  contractum *Say.*
  affine *Say.*
Tachys scitulus *Lec.*
  laevus (*Say*).
  nanus (*Gyll.*).
  flavicauda (*Say*).
Tachys xanthopus (*Dej.*).
  incurvus (*Say*).
  v. pulchellus *Lec.*

DYTISCIDAE.

(Haliplidae.)

Haliplini.

aliplus fasciatus *Aubé.*
nemidotus 12-punctatus (*Say.*)

(Dytiscidae.)

Hydroporini.

ydroporus granum *Lec.*
  nubilus *Lec.*
  granarius *Aubé.*
  inconspicuus *Lec.*
  impressus.

Noterini.

Colpius inflatus *Lec.*
Suphis bicolor (*Say*).

Colymbetini.

Coptotomus interrogatus (*Fab.*).
Ilybius biguttulus (*Germ.*).
Gaurodytes punctatus (*Mels.*).

Dytiscini.

Cybister fimbriolatus *Say.*
Thermonectes basilaris (*Harr.*).
  ornaticollis *Aubé.*

Hydaticus bimarginatus (*Say*).
Dytiscus fasciventris *Say*.

Gyrinidae.

Gyrinus analis *Say*.
Gyrinus gibber *Lec.*
Dineutes vittatus (*Germ.*).
  discolor *Aubé.*
  assimilis *Aubé.*

HYDROPHILIDAE.

Helophorini.

Hydrochus callosus *Lec.*

Hydrophilini.

Hydrophilus triangularis *Say*.
Tropisternus nimbatus *Say*.
  sublaevis *Lec.*
  glaber (*Hb.*).
  striolatus *Lec.*
Hydrocharis obtusatus (*Say*).

Hydrobini.

Berosus infuscatus *Lec.*
Philhydrus nebulosus (*Say*).
  perplexus *Lec.*
  maculicollis (*Muls.*).
  ochraeus *Mels.*

Sphaeridiini.

Cyclonotum estriatum *Say*.
Cercyon centromaculatum *St.*

SILPHIDAE.

(Silphidae.)

Silphini.

Silpha pustulata (*Hers.*).
Peltis surinamensis (*Fab.*).
  americana (*Linn.*).
  noveboracensis (*Forst.*).

SCYDMAENIDAE.

Scydmaenus capillosulus *Lec.*
  analis *Lec.*
Scydmaenus clavatus *Lec.*
  clavipes *Say*.

CORYLOPHIDAE.

Sacium fasciatum (*Say*).
Sacium misellum *Lec.*

PSELAPHIDAE.

(Pselaphidae.)

Ctenistes Zimmermanii *Lec.*
  consobrinus *Lec.*
Atinus monilicornis *Br.*
Pselaphus longiclavus *Lec.* (r.)
Bythinus zonatus *Br.*
Decarthron exsectum *Br.*
  longulum *Br.*
  formiceti (*Lec.*).
Bryaxis puncticollis *Lec.*
Eupsenius glaber *Lec.*
Batrisus *n. sp.*

Euplectini.

hexius insculptus *Lec.*
rimium globifer (*Lec.*).
dubium (*Lec.*).
parvulum (*Lec.*).
Euplectus linearis *Lec.*
interruptus *Lec.*
pumilus *Lec.*
ruficeps *Lec.*
Faronus tolulae *Lec.*
Isabellae *Lec.*

STAPHYLINIDAE.

(Staphylinidae.)

Aleocharini.

Aleocharae.

alagria partita *Lec.*
bilobata (*Say.*)
dissecta *Er.*
venustula *Er.*
oplandria pulchra *Kraatz.*
lateralis *Mels.*
omalota trimaculata *Er.*
lividipennis *Mann.*
achyusa nigrella *Lec.*
leochara lata *Grav.*
brachypterus (*Fourc.*)
bimaculatus *Grav.*

Gyrophaenae.

yrophaena vinula *Er.*
dissimilis *Er.*
socia *Er.*

Gymnusae.

yllaena fuscipennis *Kraatz.*
inopsis americanus *Kraatz.*
myllanoides *Kraatz.*

Tachyporini.

oproporus ventriculus *Er.*
laevis *Lec.*
Tachyporus maculipennis *Lec.*
Conosoma basale *Er.*
v. scriptus *Fvl.*
Bolitobus pygmaeus (*Fabr.*).
Bryoporus flavipes *Lec.*

Staphylini.

[*Quedini.*]

Acylophorus pronus *Er.*
Heterothops pusio *Lec.* (*Cab. of Dr. Horn*).
Quedius fulgidus (*Fab.*).
molochinus (*Grav.*).
ferox *Horn Mss.*

[*Staphylini.*]

Creophilus villosus (*Grav.*).
Staphylinus maculosus *Grav.*
mysticus *Er.*
tomentosus *Grav.*
vulpinus *Nordm.*
cinnamopterus *Grav.*
Ocypus ater (*Grav.*).
Belonuchus ephippiatus (*Say*).
Philonthus aeneus (*Rossi*).
hepaticus *Er.*
scybalarius *Nordm.*
thoracicus (*Grav.*).

Philonthus sobrinus *Er.*
  paederoides *Lec.*
  noviboracensis *Horn Mss.*

Xantholini.

Gyrophypnus cephalus *Say.*
Leptolinus ruficollis *Lec.*
  nigripennis *Lec.*
Diochus Schaumii *Kraatz.*

Paederini.

Lathrobium angulare *Lec.* (*Cab. Dr. Horn.*)
  longiusculum *Guér.*
  collare *Er.*
  nigriceps *Dej. Cat.*
Cryptobium badium (*Grav.*).
  bicolor (*Grav.*).
  despectum *Lec.*
  pallipes (*Grav.*).
Rugilus angularis *Er.*
Scopaeus opacus (*Lec.*).
Lithocharis ochrea (*Grav.*).
  confluens (*Say*).
Dacnochilus angularis *Er.*
Sunius linearis *Er.*
  binotatus *Say.*
  longiusculus *Mann.*
  monstrosus *Lec.*
Paederus littorarius *Grav.*
  littoreus *Zimm. MSS.* (*Cab. Dr. Horn.*)

Pinophilini.

Pinophilus picipes *Er.*
  latipes *Er.*
  parcus *Lec.*
  opacus *Lec.*

Palaminus pallipes *Lec.*
  testaceus *Er.*

Stenini.

Stenus stygicus *Say.*
  arculus *Er.*
Euaesthetus Americanus *Er.*
Edaphus nitidus *Lec.*

Oxytelini.

[*Oxypori.*]

Oxyporus cinctus *Grav.* (*v*).

[*Osorini.*]

Osorius latipes (*Grav.*).

[*Oxyteli.*]

Bledius semiferrugineus *Lec.*
Platystethus americanus *Er.*
Oxytelus sculptus *Grav.*
  insignitus *Grav.*
  nitidulus *Grav.*
Apocellus longicornis (*Sachse*).
  sphaericollis (*Say*).
Trogophloeus *n. sp.*

Omalini.

Coryphium notatum *Lec.*

(Prestidae.)

Glyptoma costale *Er.*

Histeridae.
(Histeridae.)
Hololeptini.

Hololepta 4-dentata (*Fab.*).

Histerini.

Hister abbreviatus *Fab.*
  depurator *Say.*

ister americanus *Payk.*
subrotundatus *Say.*
vernus *Say.*
carolinus *Payk.*
Lecontei *Mars.*
pierus publicarius *Er.*
ribalus americanus *Lec.*
aromalus aequalis (*Say*).
conjunctus (*Say*).
bistriatus *Er.*
endrophilus punctulatus (*Say*).

Saprini.

Saprinus assimilis *Payk.*
patruelis *Lec.*
Acritus exiguus (*Er*).
Aeletes fimetarius *Lec.*

(Murmidae).

Murmidini.

Murmidius ovalis (*Beck.*)

SCAPHIDIIDAE.

aphidium 4-guttatum *Say.*
Toxidium gammaroides *Lec.*
compressum *Zimm.*

TICHOPTERYGIDAE.

richopteryx Haldemanii *Lec.*

NITIDULIDAE.

Brachypterini.

ercus abdominalis *Er.*

Carpophilini.

arpophilus hemipterus (*Linn.*).
luridus *Er.*

Nitidulini.

itidula ziczac *Say.*
rometopia 6-maculata (*Say*).
mosita colon (*Linn.*).
elidota geminata (*Say*).
Stelidota 8-maculata (*Say*).

Cryptarchini.

Cryptarcha ampla *Er.*
Pityophagus 4-guttatus (*Fab.*).
v. fasciatus (*Oliv.*).
obtusus (*Say*).

(Rhizophagidae.)

Bactridium nanum (*Er.*).

Monotomini.

Monotoma americanum *Aubé.*

TROGOSITIDAE.

(Trogositidae.)

Nemosoma cylindricum *Lec.*
Trogosita virescens (*Fab.*).
    viridicyanea (*Fab.*).
Alindria cylindrica (*Serv.*).
    teres (*Mels.*).
Tenebrioides mauritanica (*Linn.*).
    nana (*Mels.*).
Tenebrioides corticalis (*Mels.*).
    marginata (*Beauv.*).
    bimaculata (*Mels.*).

(Peltidae.)

Peltini.

Ostoma ferruginea (*Linn.*).

COLYDIIDAE.

Synchitini.

Synchytodes 4-guttata (*Say*).
Synchita nigripennis *Lec.*

Colydiini.

Aulonium parallelopipedum (*Say*).

Bothriderini.

Bothrideres geminatus *Say.*

CUCUJIDAE.

(Pasandridae.)

Catogenus rufus (*Fab.*).

(Cucujidae.)

Cucujus clavipes *Fab.*
Lathropus sepicola *Er.*
Laemophloeus biguttatus (*Say*).
    modestus (*Say*).
Laemophloeus testaceus (*Fab.*).
    punctatus *Lec.*
    pusillus (*Schön.*).
    ferrugineus (*Cratz.*).
    alternatus *Fab.*

Hemipeplini.

Hemipeplus marginipennis *Lec.*

ATOMARIIDAE.

Cryptophagini.

Tomarus pulchellus *Lec.*

Atomariini.

Atomaria ephippiata *Zimm.*

Silvanini.

Silvanus advena (*Wall.*).
    surinamensis (*Linn.*).
    planatus *Germ.*
    imbellis *Lec.*
    rectus *Lec.*

LATHRIIDAE.

Conithassa minuta (*Linn.*).
Lathridius serrata (*Payk.*).

TRITOMIDAE.

haea fumata (*Linn.*).

DERMESTIDAE.

(Byturidae.)

agus unicolor *Say.*

(Dermestidae.)

Dermestini.

nestes nubilus *Say.*
maculatus *Deg.*

Anthrenini.

Anthrenus varius *Fab.*
musaeorum (*Linn.*).*

Orphilini.

Orphilus ater *Er.*

BYRRHIDAE.

(Byrrhidae.)

nichus punctatus *Lec.*

Limnichus nitidulus *Lec.*
ovatus *Lec.*

PARNIDAE.

(Parnidae.)

Parnini.

ochus luteus *Lec.*

Pelonomus obscurus *Lec.*

LUCANIDAE.

Lucanini.

anus elaphus *Fab.*
dama *Thunb.*

Lucanus placidus *Say.*

Passalini.

Passalus cornutus, *Fab.*

SCARABAEIDAE.

(Laparosticti.)

Coprini.

[*Ateuchini.*]

(Gymnopleuri.)

thon nigricornis (*Say*).
ebenus (*Say*).

Canthon depressipennis *Lec.*
viridis (*Beauv.*).
v. obsoletus (*Say*).
chalcites (*Hld.*).
hudsonicus (*Forst.*).
v. obtusidens (*Ziegl.*).
Deltachilum gibbosum (*Fab.*).

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ed in cabinet of C. Trabrandt.

[*Scatonomi.*]

Choeridium histeroides (*Web.*).
v. Lecontei *Harold.*

Copraei.

Pinotus carolina (*Linn.*).
Copris anaglypticus *Say.*
minutus (*Drury*).
Phanaeus carnifex (*Linn.*).
nigrocyaneus *McLeay.*

Onthophagi.

Onthophagus latebrosus (*Fab.*).
ovatus (*Linn.*).
granarius *Linn.*

Aphodiini.

Aphodius granarius (*Linn.*).
stercorosus *Mels.*
bicolor *Say.*
Ataenius imbricatus (*Mels.*).
gracilis *Mels.*
stercorator (*Fab.*).
socialis *Horn.*
ovatus *Horn.*
abditus (*Hald.*).

Geotrupini.

Bolboceras farctus (*Fab.*).
lazarus (*Fab.*).
Odontaeus filicornis (*Say*).
Geotrupes splendidus (*Fab.*).
Egeriei *Germ.*
Blackburnii (*Fab.*).

Acanthocerini.

Cloeotus globosus (*Say*).

Trogini.

Trox tuberculatus (*De Geer.*).
porcatus *Say.*
punctatus *Germ.*
terrestris *Say.*
aequalis *Say.*

(Melolonthidae.)

Diplotaxini.

Diplotaxis liberta (*Germ.*).

Melolonthini.

Rhizotrogi.

Phyllophaga fusca (*Frohl.*).

(Pleurosticti.)

Rutelini.

Anomalae.

Anomala varians (*Fab.*).
lucicola (*Fab.*).
marginata (*Fab.*).

Rutelae.

Pelidnotae.

Pelidnota punctata (*Linn.*).
v. lutea (*Oliv.*).

Dynastini.

Cyclocephala immaculata *Burm.*
Chalepus trachypygus *Burm.*

Oryctini.

Pentodontes.

Ligyrus rugiceps *Lec.*

Oryctomorphi.

Polymoechus brevipes *Lec.*

Oryctes.

rategus antaeus (*Fab.*).
mormon *Burm.*
julianus *Burm.*

Dynastini.

ynastes tityus (*Linn.*).

Phileurini.

ıileurus truncatus (*Burm.*).
valgus (*Fab.*).
cribrosus *Lec.**

Cetonidae.

Cetonini.

(Gymnetini.)

Allorhina nitida (*Linn.*).
mutabilis ? (*Gory*). †
Gymnetis Sallei *Sch.*‡

Cetoniae.

Euryomia sepulchralis (*Fab.*).
fulgida (*Fab.*).

Trichini.

Trichius lunulatus *Fab.* (*v.*).
delta (*Forst.*).

BUPRESTIDAE.

Buprestini.

Chalcophorae.

halcophora virginiensis *Lec.*
campestris (*Say*).
icerca divaricata (*Say*).
obscura (*Fab.*).
v. lurida (*Fab.*).
uprestis rufipes *Oliv.*
lineata *Fab.*
ecilonota thureura (*Say*).
elanophila sp. ignot (*Cab. Trabrandt.*)
hrysobothris femorata *Lec.*
v. alabamae *Gory.*
v. 4-impressa *Gory.*
v. Lesueuri *Gory.*
chrysoela *Illig.*
azurea *Lec.*
dissimilis *Gory.*

Agrilini.

Agrilus ruficollis (*Fab.*).
difficilis *Gory.*
granulatus *Say.*
fallax *Say.*

Brachyes.

Taphrocerus gracilis (*Say*).
Brachys ovata (*Web.*).

THROSCIDAE.

hroscus alienus *Br.*

In Cabinet C. Trabrandt.

Only fragment of wing case found under bark at City Park, December, 1872.

A single specimen taken in grass on Annette street a few years since, in cabinet of C. Tra-andt.

ELATERIDAE.

(Eucnemidae.)

Melasini.

Anelastes Druryi *Kirby*.

(Cerophytidae.)

Perothopini.

Perothops mucida (*Gyll.*).

(Elateridae.)

Agrypnini.

Adelocera discoidea (*Web.*).
marmorata (*Fab.*).
Lacon rectangularis (*Say*).

Chalcolepidiini.

Chalcolepidius viridipilis (*Say*).
Alaus oculatus (*Linn.*).
myops (*Fab.*).

Hemirhipini.

Hemirhipus fascicularis (*Fab.*)

Elaterini.

(Cardiophori.)

Cardiophorus amictus *Mels.*
Drasterius dorsalis (*Say*).

Monocrepidii.

Monocrepidius suturalis *Lec.*
Monocrepidius auritus (*Hbst.*).
bellus (*Say*).

(Dicrepidii.)

Dicrepidius ramicornis (*Beauv.*).

(Ludii.)

Orthostethus infuscatus (*Germ.*).
Crigmus texanus *Lec.*

(Melanoti.)

Melanotus ignobilis (*Mels.*, *Cab. Dr. Horn*).
fissilis (*Say*).
communis *Harr.*
sagittarius *Lec.*

(Athoi.)

Athous cucullatus (*Say*).

Corymbeti.

Bladus quadricollis (*Say*, *Cab. Dr. Horn*).
Nothodes dubitans (*Lec.*, *Cab. Dr. Horn*).

Melanactes.

Melanactes piceus *Deg.*

(Cebrionidae.)?

Cebrio bicolor *Fab.*

RHIPICERIDAE.

Zenoa picea (*Beauv.*).
Sandalus niger *Knoch.*

DASCYLLIDAE.

(Helodidae.)

Helodini.

on modestus *Lec.*

Ptilodactylini.

Ptilodactyla elaterina *Guér.*

LAMPYRIDAE.

(Lampyridae.)

Lycini.

teron reticulatum (*Fab.*).
r. terminale *Say.*
ia sanguinipennis (*Say*).
mollis *Lec.*

Lampyrini.

(Pleotomini.)

omus pallens *Lec.*
nus corruscus (*Linn.*).
onsanguineus *Lec.*
yralis (*Linn.*).

Luciolini.

ris pensylvanicus (*Deg.*).

(Telephoridae.)

Chauliognathini.

Chauliognathus americanus (*Forst.*).
marginatus (*Fab.*).

Telephorini.

Telephori.

Telephorus scitulus (*Say*).
rectus *Mels.*
bilineatus (*Say*).
Ditemnus bidentatus (*Say*).

Malachidae.

Malachini.

Temnopsophus bimaculatus *Horn.*

CLERIDAE.

Clerini.

[*Tilli.*]

ocerus terminatus (*Say*).
todera inornata *Say.*

[*Cleri.*]

s Nutalli (*Kirby*).
osimus rosmarius *Say.*
horacicus *Oliv.*

Enoplini.

Cregya vetusta (*Spin.*).
oculata (*Say*).
Orthopleura damicornis (*Fab.*).

Corynetini.

Corynetes rufipes (*Fab.*).

Cupesidae.

Cupes concolor *Westw.*

PTINIDAE.

(Ptinidae.)
Ptinini.
Gibbium scotias (*Linn.*).

Mezium americanum (*Lap.*).
Ptinus fur (*Linn.*).

[ANOBIIDAE.]

Anobiini.
(Dryophili.)
Ernobius mollis (*Linn.*).
Sitodrepa panicea *Fab.*
Trypopitys sericeus (*Say*).

Xyletini.
Eupactus nitidus *Lec.*
    punctatus *Lec.*
Hemiptychus punctatus *Lec.*
    gravis (*Lec.*).

(BOSTRICHIDAE.)

Bostrichini.
Sinoxylon basilare (*Say*).
Bostrichus armiger *Lec.*

Amphicerus bicaudatus (*Say*).

(Lyctidae.)
Lyctus striatus (*Mels.*).

CIOIDAE.

Cis fuscipes *Mellie.*
    pensylvanicus *Crotch.*

Enneathron Mellyi *Mell.*
Ceracis Sallei *Mell.*

TENEBRIONIDAE.

(Tentyrionidae.)
Epitragini.
Schoenicus puberulus *Lec.*

(Tenebrionidae.)
Tenebrionini.
[*Upes.*]
Polypleurus perforatus (*Germ.*).
Nyctobates pensylvanicus (*Deg.*).
    barbata (*Knoch*).
Merinus laevis (*Oliv.*).

Haplandrus femoratus (*Fab.*).
Centronopus calcaratus (*Fab.*).
Xylopinus aenescens *Lec.*

[*Tenebrioni.*]
Tenebrio obscurus *Fab.*
    tenebrioides *Beauv.*
    castaneus *Knoch.*
    molitor *Linn.*
Sitophagus pallidus (*Say*).

Pedinini.

(Platynoti.)

trinus notus (*Say*).

Ulomini.

lobium ferrugineum (*Fab.*).
thocerus cornutus (*Fab.*).
ocerus maxillosus (*Fab.*).
plus ferrugineus *Lec.*
rsus seditiosus *Lec.*
ma impressa *Mels.*
imberbis *Lec.*
punctulata *Lec.*
tochia picea (*Mels.*).

Heterotarsini.

ratenetus fuscus *Lec.*

Trachyscelini.

aleria longula *Lec.*
picipes *Say.*
chyscelis flavipes *Mels.*

Diaperini.

Diaperis hydni *Fab.*
Hoplocephala viridipennis (*Fab.*).
bicornis (*Oliv.*).
Platydema excavatum (*Say*).
erythrocerum *Lap.*
ruficorne (*Sturm.*).
ellipticum (*Fab.*).
cyanescens *Lap.*
flavipes (*Fab.*).
janus (*Fab.*).
Alphitophagus bifasciatus (*Say*).

Bolitophagini.

Bolitotherus cornutus (*Fab.*).

Helopini.

Helops undulatus *Lec.*
cisteloides *Germ.*

Meracanthini.

Meracantha contracta (*Br.*).

Strongylini.

Strongylium terminatum (*Say*).

CISTELIDAE.

ecula erythrocnemis *Germ.*
Hymenorus obscurus (*Say*).

PYROCHROIDAE.

rochroa flabellata *Fab.*

Anthicidae.

Anthicini.

toxus monodon *Fab.*
Tomoderus constrictus *Say.*
Anthicus floralis *Payk.*
formicarius *Lax.*
vicinus *Lax.*

MELANDRYIDAE.

Melandryini.

nthe obliquata (*Fab.*).
nchroa punctata *Newm.*
othus varians *Lec.*
Melandrya striata *Say.*
Eustrophus bicolor (*Say*).
tomentosus *Say.*
bifasciatus *Say.*

MORDELLIDAE.

Anaspis flavipennis *Hald.*

Mordellini.

Mordella oculata *Say.*
octopunctata *Fab.*
Glipa hilaris (*Say*).
Mordellistena aspersa (*Mels*).
pustulata (*Mels*).
unicolor *Lec.*
Mordellistena ambusta *Lec.*
pubescens (*Fab.*).
liturata (*Mels.*).
hebraica *Lec.*
discolor (*Mels.*).

(Rhipiphoridae.)

Rhipiphorini.

Rhipiphorus limbatus *Fab.*
Sayi *Lec.*

MELOIDAE.

Lyttini.

Macrobasis Fabricii (*Lec.*).
Epicauta vittata *Lec.*
Epicauta cinerea *Lec.*
pensylvanica *Lec.*
strigosa (*Sch.*).

OEDEMERIDAE.

Nacerdes cana *Lec.*
notoxoides *Hald.*
Asclera ruficollis (*Say*).

PYTHIDAE.

Pythini.

Boros unicolor *Say.*

SCOLYTIDAE.

Platypini.

Platypus 4-dentatus (*Oliv.*).

Tomicini.

Cryphalus hispidulus *Lec.*
dissimilis *Zimm.*
mali *Fitch.*
Xyloterus politus *Say.*
Xyleborus pubescens *Zimm.*
caelatus *Eich.*
xylographus (*Say*).
Tomicus cacographus *Lec.*
calligraphus *Germ.*
pini (*Say*).
Micracis suturalis *Lec.*
Scolytus 4-spinosus *Say.*
(Caryae Riley.)

Hylurgini.

Chramesus hicoriae *Lec.*
Polygraphus rufipennis (*Kirby*)
Hylesinus aculeatus *Say.*
Dendroctonus punctatus *Lec.*
Hylastes pinifex (*Fitch*).

SPERMOPHAGIDAE.

Mylabris pisi (*Linn.*).
  mimus (*Say*).
  sinuatus (*Sch.*).
Mylabris obsoletus (*Say*).
Spermophagus Robiniae *Schh.*
Caryoborus arthriticus (*Fab.*).

ANTHRIBIDAE.

Anthribus cornutus *Say.*
Cratoparis lunatus *Fab.*
Tropideres bimaculatus (*Oliv.*).
Brachytarsus variegatus *Say.*

BRENTHIDAE.

Eupsalis minuta (*Drury.*)

CURCULIONIDAE.

Rhyncophorini.

Sphenophorus cariosus *Oliv.*
  cicatricosus *Say.*
  immunis *Say.*
  inaequalis *Say.*
  nubilus *Gyll.*
  pertinax *Oliv.*
  placidus *Say.*
  13-punctatus *Ill.*
  truncatus *Say.*
  Sayi *Gyll.*
Calandra oryzae (*Linn.*).
  remotepunctata *Gyll.*
Rhyncophorus cruentatus *Fab.*

Cionini.

Cionus scrophulariae *Auct.*

Centorhynchini.

Conotrachelus anaglypticus *Say.*
  nenuphar (*Hbst.*).
  posticatus *Say.*
Cryptorhynchus ferratus *Say.*
  obliquus *Say.*
Rhyssomatus lineaticollis *Say.*

Brachyderini.

Tanymecus confusus *Say.*
Aphrastus taeniatus (*Say*).
Compsus auricephalus (*Say*).

Cleonini.

Thecosternus rectus *Lec.*
Listroderes squamiger (*Say*).
Eudiagogus Rosenscholdi (*Fab.*).

Mecorhynchini.

Lixus concavus *Say.*
  musculus *Say.*
Lepyrus gemellus *Kirby.*
Eudocimus Mannerheimi *Boh.*
Hylobius confusus *Kirby.*
  pales (*Hbst.*).
  stupidus *Boh.*
Pissodes strobi *Peck.*

Erirhinini.

Erirhinus rufus *Say.*
Dorytomus mucidus *Say.*
Anthonomus 4-gibbus *Say.*
  scutellaris *Lec.*
Balaninus nasicus *Say.*

Apostasimerini.

Analcis aereus *Say.*
Analcis foveolatus *Say.*
  fragariae *Riley.*
Pterocolus oratus (*Fab.*).
Baris confinis *Lec.*
  interstitialis *Say.*
  farctus *Lec.*
  trinotatus *Say.*
Centrinus penicellus *Hbst.*
  scutellum-album *Say.*
Madarus undulatus *Say.*

CERAMBYCIDAE.

(Parandriae.)

Parandrini.

Parandra brunnea (*Fab.*).
  polita *Say.*

(Prionidae.)

Prionini.

Mallodon dasystomus (*Say*).
Orthosoma brunneum (*Forst.*).
Prionus laticollis (*Drury*).
  fissicornis *Hald.*

(Cerambycidae.)

Cerambycini.

Asemum moestum *Hald.*
Hylotrupes bajulus (*Linn.*).
Phymatodes variabilis (*Fab.*).
Smodicum cucujiforme (*Say*).
Chion garganicum *Fab.*
Eburia 4-geminata (*Say*).
Elaphidion atomarium (*Drury*).
  villosum (*Fab.*).
  unicolor *Rand.*
Heterachthes 4-maculatus *Newm.*
Phyton pallidum (*Say*).
Ancylocera bicolor *Oliv.*
Callichroma splendidum *Lec.*
Tragidion fulvipenne *Say.*
Stenosphenus notatus (*Oliv.*).
Cyllene pictus (*Drury*).
  robiniae (*Forst.*).
Calloides nobilis (*Say*).
Arhopalus fulminans (*Fab.*).
Xylotrechus colonus (*Fab.*).
Neoclytus scutellaris (*Oliv.*).
  luscus (*Fab.*).
  capraea (*Say*).
  muricatulus (*Kirby*).
  erythrocephalus (*Fab.*).
Euderces picipes (*Fab.*).
  pini (*Oliv.*).
Distenia undata (*Oliv.*).
Desmocerus cyaneus *Fab.*

(Lepturidae.)

Stenocorus lineatus (*Oliv.*).
Acmacops subpilosa *Lec.*
Strangalia luteicornis (*Fab.*).
Typocerus velutinus *Oliv.*
  sinuatus (*Newm.*).

ura erythroptera *Kirby*.
vittata *Germ*.
mira scalaris *Say*.
us fasciatus *Lec*.

(Goidae.)

hammus titillator (*Oliv.*).
cutellatus (*Say*).
aschema nigrum (*Say*).
emis cinereus (*Oliv.*).
tesselatus (*Hald.*).
ulcher (*Hald.*).
lebilis *Lec*.
rodera scalator (*Fab.*).

(Lamiadae.)

thoderus 4-gibbus *Say*.
chirus obsoletus *Thoms*.

Leptostylus biustus *Lec*.
  Trabrandtii *S. n. sp.*
Sternidius cinereus *Lec*.
Hyperplatys aspersus (*Say*).
Graphisurus fasciatus (*Deg.*).
  triangulifer *Hald*.

§§

Dectes spinosus (*Say*).
Oncideres cingulatus (*Say*).
Ataxia crypta (*Say*).
Hippopsis lemniscata (*Fab.*).
Saperda discoidea *Fab*.
  lateralis *Fab*.
  puncticollis *Say*.
Mecas pergrata (*Say*).
Oberea ocellata *Hald*.
  mandarina (*Fab.*).
  Schaumii *Lec*.
Tetraopes tetraophthalmus *Fst*.

CHRYSOMELIDAE.

(Donacidae.)

Donaciae.

cia sp.

(Crioceridae.)

Lemae.

Lemini.

lachna Childreni *Kirby*.
a elongata *Esch*.
collaris *Say*.
-punctata (*Oliv.*).

§§

Cryptocephalini.

4-guttata (*Oliv.*).
noptera dominicana (*Fab.*).
nys placata (*Frb.*).
a dispar *Lac*.
chus saponatus (*Fab.*).

Cryptocephalus leucomelas *Say*.
Pachybrachys luridus (*Fab.*).
Fidia longipes (*Mels.*)
  vitis *Walsh*.

Chrysomelini.

Chrysochus auratus (*Fab.*).
Paria 6-notata (*Say*).
  4-notata (*Say*).
  atterrima (*Oliv.*).
Metachroma dubiosa (*Say*).
  interrupta (*Say*).
Colaspis brunnea *Fab*.
  picipes *Oliv*.
Chrysomela juncta *Germ*.
Gastrophysa cyanea *Mels*.
Gonioctena rufipes *Deg*.
Plagiodera scripta (*Fab.*).
  viridis (*Mels.*).
  lapponica (*Linn.*).

GALERUCARIDAE.

Galerucini.

Cerotoma caminea (*Fab.*).
Agelastica halensis (*Linn.*).
Monocesta coryli (*Say*).
Diabrotica 12-punctata (*Oliv.*).
vittata (*Fab.*).
longicornis (*Say*).
Galeruca cribrata *Lec.*
Galerucella sagittariae *Gyll.*
notulata *Fab.*
Trirhabda tomentosa (*Linn.*).
Oedionychis gibbitarsis *Say.*
vians *Illig.*
Disonycha alternata (*Illig.*).
pensylvanica (*Illig.*).
6-lineata (*Oliv.*).
abbreviata (*Mels.*).
triangularis (*Say*).
collaris (*Fab.*).
collata (*Fab.*).
Graptodera rufa (*Linn.*).
sublineata (*Lec.*).
Systena elongata (*Fab.*).
Crepidodera Helxines (*Linn.*).
ochracea *Lec.*
Epitrix cucumeris (*Harr.*).
hirtipennis *Mels.*
Chaetocnema denticulata (*Illig.*).
parcepunctata *Crotch.*
Blepharida rhois (*Forst.*).

(Hispae.)

Odentota scutellaris (*Oliv.*).
rosea (*Web.*).

(Cassidae.)

Cassida bivittata *Say.*
Coptocycla aurichalcea *Chev.*
guttata (*Oliv.*).
clavata (*Fab.*).

COCCINELLIDAE.

(Coccinellidae.)

Securipalpes.

[*Gymnosomides.*]

Coccinellini.

Megilla maculata *Deg.*
Hippodamia convergens *Guér.*
parenthesis (*Say*).
obsoleta.
Anisosticta strigata (*Th.*).
Coccinella munda *Say.*
binotata *Say.*
affinis *Rand.*
v. venusta *Mels.*
Cycloneda sanguinea (*Linn.*).
Adalia bipunctata (*Linn.*).
Ludovicae *Muls.*

(Trichosomidae.)
Epilachnini.

Epilachna borealis *Fab.*

Chilocorini.

Chilocorus bivulnerus *Mels.*
Exochomus tripustulatus.

Hyperaspini.

Psyllobora 20-maculata (*Say*).
Brachyacantha ursina (*Fab.*).

Scymnini.

Scymnus fraternus *Lec.*
haemorrhous *Lec.*

EROTYLIDAE.

Languria bicolor (*Fab.*).
  Mozardi *Latr.*
  v. trifasciata *Say.*
  puncticollis *Say.*
Megalodacne fasciata (*Fab.*).
Ischyrus 4-punctatus (*Oliv.*).
Cyrtotriplax v-aulicas (*Horn*).
  erythrocephala *Lac.*
Triplax thoracica *Say.*

ENDOMYCHIDAE.

Mycetina vittata (*Fab.*).
Endomychus biguttatus *Say.*

III. Catalogue of Boleti of New England, with Descriptions of New Species

BY CHAS. C. FROST, BRATTLEBORO, VT.

[*Read before this Society, June* 5, 1874.]

1. Boletus pictus,[*] *Peck.* **2. Boletus Ravenellii,** *B. & C.*

3. Boletus salmonicolor, n. sp.

Pileus pulvinate, with a thin edge, soft, very glutinous, brownish tawny white with a faint tinge of red, wine color when dry, 2½ inches broad. *Tubes* palish salmon color when perfect, simple, even, angular, crowded, adnate. *Stem* not large, with an annulus of a dirty salmon color, dotted with bright ferruginous red above and sordid below. *Flesh* tinged with red. *Spores* .0084-.0025 m. m.

Borders of pine woods. October.

4. Boletus luteus, *L.*

5. Boletus serotinus, n. sp.

Pileus flat convex, viscid, sordid brown, streaked with the remnants of the veil, especially near the margin; the edge is white and very thin, and when partly grown is singularly pendant. *Tubes* large, angular, unequal, slightly decurrent; at first sordid white or gray, sometimes tinged with green near the stem, afterwards of a cinnamon yellow. *Stem* 1½ to 2½ inches, generally reticulated from above to the annulus, which is white brownish on the stem by the spores, adhering partly each to the pileus and stem; at maturity just tinged with yellow. *Flesh* white, changing to a bluish tinge. *Spores* .0105-.0068 m. m.

On shady grass grounds. Rare. September.

6. Boletus viridarius, n. sp.

Pileus somewhat lenticular, sometimes fleshy with a thin border, turning up in age, viscid, reddish yellow or clear pale orange, lighter towards the edge, about 2 inches broad. *Tubes* rather large, angular, decurrent, compound, 2, 3 and 4 in one, dull yellow, changing to cinnamon color in drying. *Stem* about 3 inches long and 3 or 4 lines thick, solid, equal, bright rufous, cribrose at apex or often reticulated to the annulus, which is yellowish white with a rufous edge. *Flesh* white, with a tinge of yellow in pileus, deeper in stem. *Spores* .0089-.0042 m. m.

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[*] This species was discovered several years since by the late Mr. Dennis Murray, of Roxbury, Mass., and named *Boletus Murraii*, B. & C. (C. J. Sprague's MSS.). Under this name I have distributed it. Recently it has been published in the "Grevillea," a London periodical, as *Boletus Spraguei*, B. & C. Mr. Peck, of the New York botanical survey, several months before this latter, published it as *Boletus pictus*, Peck, therefore his name has the priority.

Found as yet only on grass plats. October.

7. **Boletus flavidus,** *Fr.*

8. **Boletus viscosus,** n. sp.

Pileus pulvinate, very viscid, dirty fuscous red or dirty tawney, with a tinge of purple, edge thin, inflexed. *Tubes* generally depressed around the stem, at first whitish, then pale yellowish white, at length dirty yellow, compound. *Stem* short, seldom exceeding ¾ of an inch, thick, whitish, tinged with pale yellowish dots and slightly cribrose at apex; the pileus seems to rest upon the ground and looks at first sight as if the whole was enveloped in slime. *Flesh* pale yellowish white. *Spores* .0073-.0025 m. m.

Borders of pine woods. October and November.

9. **Boletus collinitus,** *Fr.*
10. **Boletus albus,** *Peck.*
11. **Boletus granulatus,** *L.*
12. **Boletus bovinus,** *L.*
13. **Boletus mitis,** *Kromb.*
14. **Boletus chrysenteron,** *Fr.*
15. **Boletus subtomentosus,** *L.*
16. **Boletus spadiceus,** *Schaeff.*
17. **Boletus miniato-olivaceus,** n. sp.

Pileus at first vermilion color, then disappearing and becoming olivaceous, pulvinate, smooth, rather soft and spongy, margin at first incurved, then applanate, 2 to 6 inches broad. *Tubes* bright lemon yellow, partly adnate, then slightly decurrent. *Stem* light yellow, generally not always lurid at base, very smooth, enlarges as it enters the pileus, about ¼ to ½ of an inch thick. *Flesh* yellow, changing to blue, the pileus less yellow than in stem. *Spores* .0125-.0063 m. m.

Borders of woods. July and August.

18. **Boletus speciosus,** n. sp.

Pileus scarlet lake red, at first globose, then pulvinate, smooth, 3 to 7 inches broad. *Tubes* bright lemon yellow, small, stuffed when young, adnate. *Stem* rather large, and somewhat bulbous, often 2 inches thick, yellow and reticulated, generally red at base. *Flesh* palish yellow, changing to blue. *Spores* .0126-.0052 m. m.

In rich woods. August.

19. Boletus rubeus, n. sp.

Pileus flat convex, rather thin edge, at first inflexed, extended, turning up in age, bright brick red when young, afterwards mottled with red and yellow, very finely adpressed subtomentose, yellow under cuticle. *Tubes* bright lemon yellow when young, stuffed, afterwards yellow, and sometimes with red mouths, generally adnate, but sometimes with a slight depression. *Stem* small, often flexuous, brick red or mottled as pileus, white tomentose at base. *Flesh* yellow pale in pileus and tinged reddish in stem, changing to blue. *Spores* .0095–,0042 m. m.

In deep woods. Rare. August.

20. Boletus Spraguei, n. sp.

Pileus quite hard, very dark russet or brown, covered with a minute velvety scurf. *Tubes* very minute, yellow ochre or brownish when cut, around the mouths of a rich dark maroon color, which forms a strong contrast with the light color of stem, adnate when young. *Stem* dark brown below, croceous at top, smooth above, minutely velvety below, firm, fleshy, slightly contracted in the middle. *Flesh* white, changing to blue, texture firm and fine. The rich color of the pore mouths contrasting with the yellow stem, makes it quite distinct from other species. *Spores* .0105–.0062 m. m.

In rich woods. July and August.

21. Boletus luridus, *Schaeff.*

22. Boletus Frostii, *Russell.*

Pileus convex, thin edge, blood red, polished, shining, 3 to 4 inches broad. *Tubes* greenish, with blood red mouths or when in great perfection cinnabar red, turning yellowish brown in age, not quite adnate. *Stem* blood red, firm, unequal, enlarges downwards, sometimes flexuous at base, deeply reticulated. The tubes and stem lose their blood red color in drying. *Flesh* scarcely changes to blue. *Spores* .0126–.0042 m. m.

In grass land under trees. August.

23. Boletus alveolatus, *B. & C.*

Pileus convex, smooth, bright crimson or maroon or lighter with patches of yellow, 3 to 6 inches broad. *Tubes* distinct, separable, yellow with maroon colored mouths, about ½ inch long, attached to stem and gradually losing themselves in a superficial network on its surface. The walls of pores which extend down over the surface are bright red with yellow stains. The convexity of the mass is broken by indentations of more or less depths. *Stem* 3 to 4 inches long, ¾ of an inch thick, very rough with the margins of rather coarse subreticulated depressions. *Flesh* solid, firm, white, changing to blue. It is distinguished at some distance by its brilliant and shining maroon crimson pileus. *Spores* yellowish brown, .0147-.0047 m. m.

In damp woods. August.

24. Boletus firmus, n. sp.

Pileus pulvinate, solid, and very firm, gray, slightly tomentose, often lacunose, 2½ to 4 inches broad. *Tubes* yellow, mouths tinged with red, unequal, deeply arcuate, adnate. *Stem* solid, hard, 2 to 4 inches long, yellowish reddish at base, very finely reticulated. *Flesh* deep yellow or yellowish, changing to blue. A readily distinguished species from its tenacity and generally distorted growth. *Spores* .0125-.0032 m. m.

In rich, moist woods. July.

25. Boletus magnisporus, n. sp.

Pileus pulvinate, golden tomentose, firm, 2½ to 3½ inches broad. *Tubes* greenish yellow, with light cinnabar red colored mouths, scarcely adnate, even. *Stem* slender, long, yellow above and red below. *Spores* .0168-.0063 m. m.

In woods and thickets. September.

26. Boletus decorus, n. sp.

Pileus pulvinate, brownish tinged with red, tomentose, tolerably firm. *Tubes* yellow, becoming free, turning green when cut. *Stem* brownish, red, fine scurfy, bulbous, sometimes the bulb is attenuated at base and white. *Flesh* white, unchanging. The edge of the pileus is often dark with a red tinge. *Spores* .0136-.0052 m. m.

In rich woods. September.

27. Boletus tenuiculus, n. sp.

Pileus almost plane, thin, lurid red on a yellow ground, 1 to 2 inches broad. *Tubes* rather golden yellow, small, short adnate. *Stem* 4 to 6 inches long, slender, equal, colored as pileus. *Flesh* unchanging. *Spores* .0105-.0063 m. m.

In woods. August.

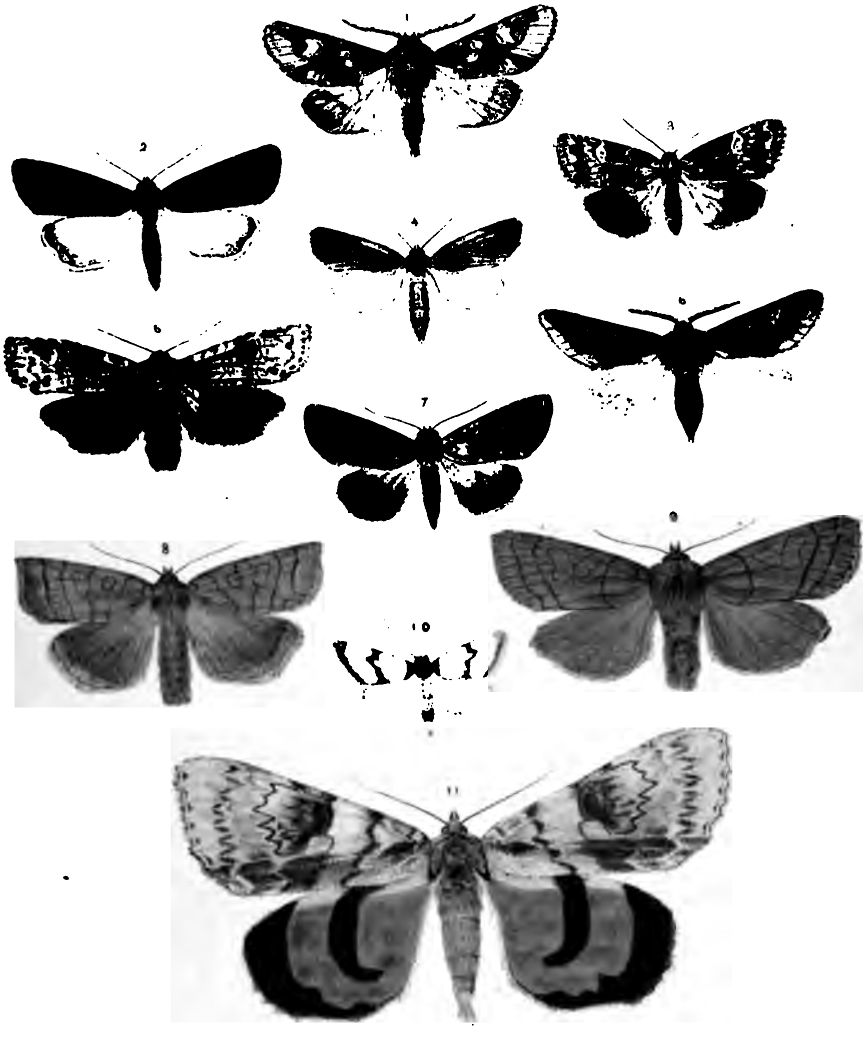
28. Boletus aurisporus, *Peck.*

29. Boletus innixus, n. sp.

Pileus flat convex, smooth, yellowish brown, slightly areolated when old, yellow in the interstices. *Tubes* lemon yellow, unchanging, adnate. *Stem* slender, short, in large specimens very much thickened at base, yellowish streaked with brown. *Flesh* white in pileus, brownish in stem. The whole often reclines as if for support. *Spores* .0105-.0052 m. m.

In grassy woods. July.

II



80. Boletus Roxanae, n. sp.

Pileus flat convex, yellowish brown, fasciculated red pilose, subtomentose when young. *Tubes* at first whitish, then light yellow, not large, falling away around the stem, or arcuate adnate. *Stem* light cinnamon or weak gamboge color, striate at apex, thickened downwards, and subtuberous. *Flesh* yellowish white, just tinged. *Spores* .0105-.0042 m. m.

Borders of woods. August and September.

81. Boletus Russellii, n. sp.

Pileus pulvinate if expanded, otherwise thick hemispherical, fasciculate red pilose on a yellow ground, 2 to 4 inches broad. *Tubes* dirty yellow or yellowish green, rather large, nearly adnate, often depressed around the stem. *Stem* very long 3 to 6 inches in most specimens, small at apex, increasing downwards, red, rough with the margins of a sharp network of alveolate depressions and in some measure from the breaking up of the epidermis. *Flesh* yellowish, unchanging. *Spores* .0147-.0084 m. m.

In rocky woods. July.

82. Boletus retipes, *B. & C.* **83. Boletus affinis,** *Peck.*

84. Boletus edulis, *Bull.*

85. Boletus limatulus, n. sp.

Pileus nearly flat, thin, smooth, of a rich yellowish brown, viscid when moist, somewhat polished and shining when dry, 1 to 2½ inches broad. *Tubes* color as pileus, greenish yellow inside, falling away around the stem. *Stem* not large, subtuberous, color as pileus. *Flesh* when cut reddish in pileus darker in stem. *Spores* .0147-.0047 m. m.

In woods. June and July

86. Boletus robustus, n. sp.

Pileus at first globose, then pulvinate, large, 3 to 10 inches broad and 1 to 1½ inches thick, chocolate color, fleshy, and so succulent that it is difficult to dry and preserve. *Tubes* long, perhaps of a lighter color than pileus, when young and in fresh specimens with a purple tinge, especially near the margin. *Stem* robust, reddish chocolate, very minutely scurfy, even, tapering suddenly at base. *Flesh* reddish white. *Spores* .0147-.0084 m. m.

In woods and thickets. July and August.

87. Boletus gracilis, *Peck.* **88. Boletus piperatus,** *Bull.*

89. Boletus ferrugineus, n. sp.

Pileus pulvinate, soft, dark reddish brown, subtomentose, 3 to 6 inches broad. *Tubes* at first dirty white, mouths brownish by the spores, generally adnate. *Stem* dark brown, short, reticulated, often slightly tuberous. *Flesh* perfectly white, unchanging. *Spores* .0115-.0063 m. m.

Borders of woods under trees. September.

IV. On the Species of Helicopis inhabiting the Valley of the Amazon

BY AUG. R. GROTE.

[*Read before this Society, March* 6, 1874.]

MORE than one hundred and seventy years ago the earliest known species of the singular and beautiful genus Helicopis was observed by Madam Merian, and figures of this species, the Helicopis Cupido (*Linn.*), are given in her work on the Insects of Surinam. A second species, Helicopis Acis, is described by Fabricius, in 1781, from Brazil. A third, Helicopis Endymion, is indicated by Cramer, in 1782, from Surinam, and re-described by Dr. Felder in 1865, as cited by W. F. Kirby in 1871, in whose Catalogue the genus Helicopis (*Fabr.*, 1807) is credited with the three species above mentioned.

Madam Merian observed the larva of H. Cupido, feeding on the cotton plant, and gives three figures of the insect[1] in her, critically speaking, admirable work. The figure of the caterpillar reminds one curiously of that of Aletia argillacea (*Anomis xylina*) observed in the Southern States.

Of all the older writers on Entomology, it is Madam Merian that affects us most. Her occupation in 1699 and 1700, in Surinam, and before that as far back as 1679, in Europe, might seem a strange one, alike for the times she lived in and for her sex. Charles the Second was King of England; but in the United Netherlands science had commenced an early bloom. Five Universities had been founded between 1557 and 1648, and while the close of the Thirty Years War found Germany prostrated, the States General had encouraged the study of Natural History and were listening to Schwammerdan and Spinoza and looking through Jansen's glasses. Rembrandt had died in 1674, and perhaps had exercised an influence to be seen even in the Frontispiece to Madam Merian's work. Meanwhile this woman pursued her life-task with high resolve and courage. She visited Dutch Guiana at a time when such a voyage implied much more sacrifice of comfort and time than it does to-day, and on a mission then neither so popular nor so honorably considered. But in her Preface—Maria Sibylla Merian ad Lectorem—she gives the reason for the faith that is in her. "Insectis jam ab ipsa juventute mea examinandis occupata" is her confession, and her quaint and simple remark preludes a number of observations on the transformations of Insects, that no one has since equalled in the same number of days or months, even in a climate much more propitious for such labor than that of Surinam, or with book knowledge and appliances much more perfect than those of the 17th century. From the historical background of the Natural Sciences, it is a woman's face looking to us for well earned remembrance.

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[1] "Haec die 9. Junii in nympham transformata, exin die 24. Julii facta est papilio, argenteis puniceisque maculis superbiens." *Merian* l. c.

Mr. Charles Linden found Helicopis Cupido, both in March and August, in the vicinity of Para. The butterfly frequented the tide-water ditches, not far from the river shore, and was usually found in repose on the under side of the leaves of bush-like caladium plants which commonly fringe these ditches. Of all the butterflies observed by Mr. Linden, the species of Helicopis seemed most sluggish. They were, however, readily roused by striking the bushes sheltering them, when they took to lazy flight, seeking quickly a fresh place for repose. Mr. Linden tells me that the natives have a distinct name for the species of Helicopis, signifying "love butterfly." This name may, however, not be derived from the lingoa geral, although the Indians are better naturalists than the negroes.

In August Mr. Linden found specimens of Helicopis Acis, as well as the more usual Helicopis Cupido, and at the same time specimens of both sexes of a hitherto unnamed species, which I call Helicopis Lindeni, in honor of its discoverer, whose scientific explorations on the Amazonas have been attended with the success which waits upon endurance and enthusiasm. This fourth species of the genus is as large as Helicopis Endymion, or Acis, and consequently larger than Helicopis Cupido, which latter it more nearly

40. Boletus pallidus, n. sp.

Pileus at first convex, then flat, depressed, pallid brownish white, sometimes with a tinge of red, 1½ to 4½ inches broad. *Tubes* pale yellow, almost white, separating easily from the pileus, not quite adnate, the part not so often tinged with green. *Stem* whitish, streaked with brown lines, somewhat enlarged at base, 3 to 5 inches long. *Flesh* white in pileus, tinged with red in stem, the tubes changing to blue. *Spores* .0105–.0065 m. m.

In woods. August and September.

41. Boletus sordidus, n. sp.

Pileus pulvinate, dirty dark brown, subtomentose, about 2 inches broad. *Tubes* at first white, long, not quite adnate, turning bluish green. *Stem* brownish, streaked very dark, smaller as it enters the pileus, generally green around the part not adnate. *Flesh* white, now and then tinged with green. *Spores* .0126–.0052 m. m.

On recent excavations in woods. July.

42. Boletus chromapes, n. sp.

Pileus flat convex, slightly tomentose, which is sometimes fasciculated, pale vermilion, 2 to 3 inches broad. *Tubes* at first white, within light brown, afterwards brown, half adnate. *Stem* whitish, colored by the brown yellowish spores, near the apex with a slight tinge of vermilion, chrome yellow at base, most often flexuous, thickened somewhat downwards. *Flesh* white, unchanging. *Spores* .0126–.0052 m. m.

In woods. July.

43. Boletus versipellis, *Fr.*

44. Boletus scaber, *Bull.*

45. Boletus felleus, *Bull.*

46. Boletus castaneus, *Bull.*

47. Boletus cyanescens, *Bull.*

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It seems almost certain that at least a single female specimen of Helicopis Lindeni is contained in the Entomological cabinets of Vienna; for in a paper entitled, "Specimen faunae lepidopterologicae riparum fluminis Negro superioris in Brasilia septentrionali," C. and R. Felder refer to a doubtful variety of Helicopis Cupido in terms[2] which sufficiently apply to Mr. Linden's butterfly. Whether our surmise in this respect is correct or not, there can be little doubt of the validity of Helicopis Lindeni, both sexes of which are illustrated in the present article.

Helicopis Lindeni *Grote.* Plate 2, figs. 1, 2 ♂, 3, 4 ♀.

♂ ♀.—Above the primaries are pale ochery white, without borders; in the male suffused with yellow at base and with a narrow terminal ocher shade widening to the apices. The hind wings are stained with ocherous, more deeply so in the male, with whitish tips to the "tails," and a narrow terminal gilding within the pale emarginations; the fringing is deep ocherous. There are depressions on the tegument answering to the metal spots beneath. On the under-surface the fore wings are without borders, pale ocher white in the female, and in the male with yellow ocher base shading into black somewhat as in H. Cupido, but less distinctly, the black color being undefined and not so medially produced about veins 3 and 4; the fringes are ocherous, as is the costal region of the ♂ primary. The terminal margin shows an ocherous linear shade, including gilded scales. The hind wings beneath are pale ocherous, darker in the male, and both sexes show the usual three series of metallic spots. These are, however, comparatively larger and purely argent in the new species, the costal spots ringed with deep ocherous, and not darkly annulate as in H. Cupido. The body parts are unusually pallid, and the antennae annulate as in the other species. The new species is larger than H. Cupido, expanding the male 46, the female 48 m. m.

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[2] "Unicam feminam accepimus. Multum haeremus, varietas an aberratio sit. Brasiliensibus quarta fere parte major est, pagina utraque alarum albida, passim ochraceo tincta, alae anticae apud basin testaceum ostendunt colorem, cilia alba sunt, maculae submarginales haud plumbeae sed argenteae, maculae elevatae paginae inferioris alarum posticarum argenteae et aequalibus separatae intervallis." W. E. M., Band VI, S. 70.

V. Descriptions of New Noctuidae

BY H. K. MORRISON, CAMBRIDGE, MASS.

[*Read before this Society, June* 5, 1874.]

Genus LUCERIA, *v. Heinemann.*

Luceria[1] **Burgessi** (nov. sp.).

Expanse, 33 m. m. *Length of body,* 17 m. m.

Eyes naked, without hairy lashes. Palpi, front and vertex dark brown. Front rounded; densely and evenly clothed. Antennae of the male with fine hairy fringes. Collar and thorax dark brown; the former lighter at its base; the latter with its villosity dense, but smoothly stroked, without tufts or crests. Abdomen lighter, tinged with yellow, without hairy tufts. Legs dark brown, not spinose; the joints of the tarsi showing contrasting light rings. Anterior wings with the sub-basal and subterminal spaces carneous or brownish cinereous, shading into blackish brown towards the costa, which is of this color along its entire course, with the exception of three or four light subapical dots. Median and terminal spaces dark, slightly purplish brown. Basal line present. Interior line geminate, its inner line faint, the outer black, distinct, dentate, very strongly so on the submedian nervure, below which it is produced in a spade-shaped tooth. A narrow black longitudinal basal line beneath the submedian nervure, and opposite to the apex of this tooth. Median shade narrow and dentate below, broader and more diffused on the disc, adjacent to the reniform spot. Orbicular of medium size, kidney-shaped and concolorous, surrounded by a fine black line. A black dash sometimes extends from it to the interior line. Reniform of the usual shape, carneous cinereous, with a light irregular central shade. Exterior line geminate; its inner line black and distinct, of the usual form, acutely dentate, but not forming any very prominent teeth. Exterior and interior lines connected between the median and submedian nervures by a conspicuous black line, becoming broader

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[1] Mr. Morrison has kindly permitted me to change his MS. generic determinations of Luperina in this and the following species. While referring several of Lederer's Luperinas to Hadena, v. Heinemann, without any reference to Lederer's genus, takes the European *virens* as the type of *Luceria*, to which genus then, as will appear from Mr. Morrison's observations, our two hitherto undescribed species belong. For Lederer's Group B, not occurring within the geographical limits embraced by v. Heinemann's work, the term *Ledereria* may obtain. No American species have been hitherto noticed. As yet no species of Apamea *Led.* (nec *Guen.*) are described from our territory. I have pointed out elsewhere that for this genus the term Luperina *Bdv.*, should probably obtain.—*Grote.*

as it joins the exterior line. Subterminal line very irregular, jagged and conspicuous on account of the contrast of color between the terminal and subterminal spaces. It forms particularly two *Hadena*-like teeth along the second and third median branches. Nervules black in the terminal space. Posterior wings white, tinged slightly with yellow. Nervules at their termination blackish, thus giving the wings a narrow irregular terminal band. Anterior wings beneath, dark fuscous, lighter along the inner margin; traces of the exterior line. Posterior wings beneath, yellowish white, distinctly yellow at the base and along the costa.

Habitat, Tuckernuck Island, near Nantucket. Four specimens taken by Mr. Bigelow, and now in the collections of Edward Burgess and H. K. Morrison.

This and the following species are quite different in color from the only European species of the genus I have (*Virens,* Linn.). But their generic characters agree exactly with those of *Luperina,* Led., and I have no hesitation in referring them there.

L. Burgessi can be distinguished by the white posterior wings, and the black dash connecting the median lines of the anterior wings. The basal submedian line and the jagged subterminal are also good characters. It has a superficial resemblance to *Dryobota fibulata,* from which it can be separated by the absence of bristly eye lashes, the untufted abdomen, and the white posterior wings.

I take great pleasure in dedicating this new species to Mr. Edward Burgess, Secretary of the Boston Society of Natural History, a most careful student and naturalist.

Luceria loculata (nov. sp.).

Expanse, 36 m. m. *Length of body,* 18 m. m.

Eyes naked, without bristly lashes. Male antennae setiform, the fringes extremely fine. Thorax dark grayish or carneous brown, the vertex and front almost black. Anterior wings dull carneous grayish brown, with the terminal space and the wings adjoining the nervules, particularly in the median space, dull black, with a slight purple reflection in certain lights. Interior line, single, subobsolete, dentate, forming two broad teeth between the median and submedian nervures, and the latter and the inner margin. The ordinary spots give the only strongly marked characteristics of the wings; the orbicular and reniform are concolorous and contained in a shade of the ground color situated between the two blackish shade lines following the subcostal and median nervures. The orbicular varies in shape; it is sometimes round, again it is

more or less elongated, and in one specimen almost reduced to a black line; it is surrounded by a more or less distinct black annulus. Reniform of the ordinary form, encircled with black, in one specimen with a central darker shade, in the others concolorous. The claviform spot is very conspicuous, reduced to a thick, short, deep black line. Exterior line of usual form, indistinctly geminate, inwardly sharply indented between the nervules and with a noticeably long and sharp tooth on the submedian nervule. Subterminal line geminate, set off by the contrasting terminal space; it forms a sharp inward tooth on the first median nervule, below which it regularly curves outwardly and is again produced into a blunt tooth just above and before the inner angle. A black line at the base of the fringe, forming dots between the nervules. Posterior wings fuscous, with a very broad, dark, diffused, terminal band. Beneath, the anterior wings are dark fuscous gray, lighter at the base, and the costa dull carneous. A thick, black exterior line common to both wings. Posterior wings lighter gray, with a terminal dark band and discal dot.

Var. a **conspicua** (nov. var.).

In this form the orbicular is round and with the reniform filled with light gray. Claviform as in the typical species. A light grayish, slightly carneous shade extends from the base below the claviform spot, to the terminal space, and also fills the subterminal space to the fifth subcostal nervule (veinlet 6 of the German entomologists); above this the subterminal space is blackish, together with the terminal and upper part of the median spaces. The rest of the markings as in *loculata*.

Hab., Mass., New York. Four specimens examined and one of the *var. conspicua.*

Collections of Buf. Soc. Nat. Sci. and H. K. Morrison.

At first view the specimen of the variety would hardly be placed with the usual form, and looks distinct, but the differences are mainly of color and the specific characters agree with those of the type.

Loculata can be distinguished from resembling species of neighboring genera, by the generic differences given under *Burgessi.* The claviform gives the best character, the species can at once be recognized by that. The dull, faded, carneous gray and blackish shades can also be used to separate the normal form.

Genus **DRYOBOTA,** *Lederer.*

Dryobota fibulata (nov. sp.).

Expanse, 36 m. m. *Length of body*, 15 m. m.

Eyes naked, with strong bristly lashes. Palpi blackish with intermixed gray hairs, third joint cylindrical, distinct. Front and vertex gray. Collar arched, dark gray, with an evident central black line; the upper edge of the collar whitish. Thorax square with an angular projection on each side, and a flat, longitudinally furrowed fore and hind tuft above; the front of the tuft is marked in the same manner as the collar, that is to say, gray, with a black central line and tipped with white. Thorax mixed gray and white beneath; beneath the angular projection in the sides there is a clear white spot. Abdomen with four strong tufts, the third the most prominent, vertical, rounded behind; the fourth is horizontal and square behind. Anterior wings with light gray and blackish fields. A short basal longitudinal dash between the median and submedian nervures. Ground color of the basal and sub-basal spaces light gray with numerous darker and brownish gray discolorations; shades of the latter color are also to be found in and around the orbicular and beyond the reniform. Interior line irregular, thickened opposite the orbicular, which it adjoins, then nearly straight to the submedian nervure, below which it forms a spade-shaped tooth. Median space blackish gray, with various lighter and brownish gray spots. Orbicular of medium size, light gray, with central brownish gray shades; forming a perfect ellipsis, its major axis parallel to the fourth median nervule. Median nervure and its branches blackish, beneath the former, the claviform spot distinct, large, concolorous, triangular, is outlined in black. Its lower side forming part of a black dash which connects the interior and exterior lines. Reniform spot large, indistinctly outlined outwardly, light gray, with a crescent-shaped brownish gray internal shade. Exterior line indistinctly geminate, dentate, of usual shape. Subterminal space whitish gray, darker costally; terminal space dark gray, separated from the former by a white line following the lobate black subterminal line, both more distinct near and at the costa. The line at the base of the fringe dentate, connected with short lines which extend inward between the nervules. Posterior wings uniform dark gray, without lines or spots. Beneath both wings dark gray, the anteriors nearly uniformly colored; the posteriors lighter at the base with a distinct discal dot and faint line.

Hab., Quebec, Can. In my collection from Prof. F. X. Belanger.

Our first species of Dryobota, is perhaps separated with the greatest facility from the species it resembles most, by its generic characters. It has somewhat the color and markings of *Mamestra atlan-*

tica, Grote (Had. W. latinum ‡, of authors), excepting the W-shaped marking of the subterminal line. From this species it can also be distinguished by the angular projection on the sides of the thorax, by the non-hairy eyes with lashes and the thoracic tuft.

Genus **MAMESTRA,** *Ochsenheimer.*

Mamestra assimilis (nov. sp.).

Expanse, 38 m. m. *Length of body*, 18 m. m.

Front and palpi black. Eyes hairy. Thorax and collar black, the former without tufts. Abdomen conical, gray, with a flattened hairy tuft on the first segment, and the usual lateral tufts, which together with the anus are tinged with carneous. Anterior wings dead black; lines subobsolete, clear black; spots concolorous, surrounded by fine intense black lines; beneath the median nervure a slender basal longitudinal streak. Interior line most prominent on the costa, forming there an angle the apex of which nearly reaches to the orbicular spot; below, the line is produced in a regular curve between the median and submedian nervures; from the center of this curve projects the the claviform spot, small, acutely triangular and very distinct; below the submedian nervure the line forms a spade-shaped tooth; ordinary spots large, without internal annuli, the orbicular slightly elliptical, the reniform approaching the shape of the figure eight, constricted in the middle on both sides. Exterior line dentate between the nervules, of the usual form. Subterminal line represented by black diffused spots which precede and partially surround a series of cream-white spots. Those of the latter between the fifth and sixth subcostal, the sixth subcostal and the first median, and the first and second median nervules are small, punctiform and distinct; that between the second and third median nervules is obsolete, and that between the third and fourth is united with the one at the inner angle, forming a large irregular blotch, sometimes filling nearly the whole angle. The nervules are of a little deeper black than the ground color, the inner margin is slightly tinged with carneous and there are three or four costal subapical white dots. The posterior wings are white, the nervures strongly marked with black, and with a large discal dot and a broad, black terminal band. Anterior wings beneath, gray, with numerous white atoms. The entire apex and terminal space are purple carneous. Posterior wings white, with a conspicuous discal dot, and a broad costal and terminal carneous gray shade band, obsolete at the anal angle.

Hab., Massachusetts. Collection of H. K. Morrison.

The uniform dead black anterior wings with the markings in brighter black, will at once separate from the rest of the Noctuidae the following three species, belonging to different genera, and yet so close to each other that they can hardly be distinguished except by their generic characters.

Eyes hairy, tibiae unarmed, abdomen conical:

MAMESTRA ASSIMILIS *Morr.*

Eyes naked, tibiae unarmed, abdomen conical:

HADENA IMPULSA (*Guen.*).

Eyes naked, tibiae spinose, abdomen flattened:

AGROTIS VELLERIPENNIS *Grote.*

Genus **MORRISONIA,** *Grote.*

Morrisonia peracuta (nov. sp.).

Expanse, 37 m. m. *Length of body,* 17 m. m.

Eyes hairy. Front divided by a transverse furrow between the eyes, the sides of which are cinereous, into two short, obtuse tufts. The frontal tuft beneath and the vertical tuft above, brown. Collar and thorax gray brown, the latter with a short bifid fore and hind tuft. Collar showing a conspicuous, bicolorous, black and white transverse line. Tegulae with a similar terminal line. Anterior wings with brown and cinereous longitudinal shades. A cinereous costal shade from the base to the apex, more or less discolored by brown internervular streaks, the most prominent of which passes over the place of the orbicular (which is wanting), and obscures the disc of the almost obsolete reniform. The latter is indicated in the costal shade, only by faint, transverse, cinereous shades, and a darker central spot. The lower portion of the reniform projects slightly over and contrasts slightly with a dark chocolate brown shade, which starts from the base and proceeds along and below the median nervure to the exterior line; it gradually shades into lighter brown, and then into cinereous. Two dark brown basal dashes, one beneath the median and the other beneath the submedian nervure and along the inner margin. The exterior line forms a dash on the costa at its inception, and then six long fine black ray-like teeth, the last of which returns back towards the base, between the median and submedian nervules, meeting a like tooth from the interior line (this tooth being the only portion of that line visible); beneath this the exterior line forms a long, sharp, outwardly projecting tooth on the submedian. Subterminal space cinereous; outwardly its indentations jagged (corresponding to those of the exterior line), and in particular two long *Hadena*-like teeth, extending to the outer margin. Terminal space brown, divided into two principal areas, one above and the other below the subterminal teeth. A broad, more or less discolored cinereous shade from the base to the inner angle along the margin. A series of white terminal dashes be-

tween the nervules. Fringe brown, interrupted. Posterior wings uniform, dark fuscous, without spot or band. Fringe white. Beneath, the disc of the anterior wings dark gray, the costa and terminal space lighter. Posterior wings light gray, with discal dot and broad dark terminal band.

Hab., doubtful, probably Texas, perhaps California. Four specimens examined. In the collections of Buf. Soc. Nat. Sci. and H. K. Morrison.

Genus LITHOPHANE, *Hübn.*

Lithophane fagina (nov. sp.).

Expanse, 45 m. m. *Length of body*, 18 m. m.

Eyes naked, with strong lashes. Palpi slightly shorter than usual in *Lithophane*, shaggily haired, the third joint also clothed, not nearly smooth as in *Calocampa*. Frontal and vertical tufts short, obtuse and improminent. Collar and thorax bluish-gray, the former with a transverse black line, edged below with ocherous, most evident directly in front. Behind the collar a longitudinally furrowed thoracic crest. Abdomen untufted, slightly flattened. Wings with entire margins, shaped as in *pexata* and *cinerea;* this, with the obtuse tufts, placing the species in the section *Graptolitha*. Anterior wings with obsolete ornamentation, clear bluish-gray (the color of *Cucullia intermedia*, Speyer), with a conspicuous broad white costal shade, which gradually becomes extinct before the apex, and commences beneath the angular projection in the sides of the thorax. The spots are absent, the markings are all fine hair-like black lines, as in *intermedia*. The interior line forms one dentate tooth above the costal nervure, and below it three long sharp spine-like teeth, each longer than its predecessor, the last two projecting far into the median space; below the third tooth the interior and exterior lines are connected by a fine line which forms exactly between the base and the apex, and a little below the center of the median space a small tooth, the lines of which are thickened so that it is quite prominent. Above this tooth are the six long teeth of the exterior line, each sharp, with its apex slightly curved upwards, and terminating on a nervule. These teeth at their bases are not sharp, but rounded, in this respect differing from those of the interior line. Below the line connecting the median lines there is a free space, and below this a very long narrow spot, sharp at each end, evidently formed by the uniting together of the bases of two teeth, one from each median line; beneath this spot, and directly above the inner margin, a short black line. In the upper portion of the median space, beneath the costal white shade, there are several longitudinal lines, (the one nearest the costa being bifid and somewhat thickened,) which represent the ordinary spots united together, but in my only specimen they are too fragmentary to trace the outlines. Beyond the exterior line a series of black dots on the nervules representing the subterminal line, and from this point outwards the nervules are narrow, marked in black. Posterior wings whitish-gray, with faint discal dot and exterior line, no terminal dark band. Fringe white. Beneath, the wings are whitish-gray, the anteriors rather the darker, with a yellow spot at the base. Posterior with discal dot and exterior line.

Hab., Cambridge, Mass., April 15, 1874. From my collection.

Fagina is a most interesting species, for it seems to combine in itself the characters of several genera. The fine hair-like black marking over bluish-gray ground are very similar to the *lucifuga* section of *Cucullia*, but the structural characters are not of this genus, and seem to be on the line between *Calocampa* and *Lithophane*. The subobsolescence of the tufts, the almost rounded front and the short palpi connect it with *Calocampa*, while the shape of the wings, the presence of the thoracic crest, and the fact that the frontal tufts are present, though improminent, would show that its affinities are with the section Graptolitha of *Lithophane*, where I have placed it. *Fagina* is so different from the known species that the student will find no difficulty in naming it; it seems to be, however, of very rare occurrence.

Lithophane disposita (nov. sp.).

Expanse, 37 m. m. *Length of body*, 14 m. m.

Antennae setiform. Palpi light gray, whitish on the inside, with a clear black line on the outside extending from the first to the third joint. Front and vertex with the two pair of sharply projecting tufts peculiar to *Lithophane*. Beneath the upper tuft a black line extending across the front. Collar with a transverse ⟨ -shaped black line. The usual longitudinally furrowed crest behind the collar, in this species tipped with ferruginous. Thorax light gray concolorous with the anterior wings. Abdomen with a single, slight, black tipped tuft. Anterior wings light gray with ferruginous stains. The spots very clearly outlined in black, the ordinary lines nearly obsolete. A slightly curved, black, conspicuous, longitudinal line extending from the base to just before the interior line; and a more or less distinct ferruginous patch at and above its termination. Interior line indistinctly geminate. Its outer line sometimes well marked on the costa, beneath the subcostal nervure and opposite the orbicular forming a tooth and joining below the very distinct, elongated claviform spot. The latter is outlined in black, concolorous; its apex rounded and most strongly marked. Exterior line obsolete except directly opposite to the claviform spot, where it is distinct and black. Through the narrow aperture between the claviform spot and the exterior line passes the undulate ferruginous median shade, ceasing at the reniform, but again perceptible on the costa, as an oblique blackish shade. Ordinary spots, concolorous, black. Orbicular oblong, oblique, open above. Reniform large, subquadrate, distinct below and at the sides, open above. A double row of faint spots on the nervules beyond the exterior line. Subterminal line subdentate, ferruginous. A conspicuous blackish blotch at the inner angle and another in the terminal space between and adjoining the first median and sixth subcostal nervules. Black dots at the base of the fringe, which is tinged with ferruginous. Posterior wings uniform blackish gray with the discal dots evident. Beneath the wings are light gray with scattered black atoms and distinct discal dots. Anterior wings with a basal line corresponding to that above and with the median and basal spaces darker gray. Posterior wings with a faint exterior line. Tibiae with a longitudinal black line. All the spurs black, tipped with white.

Hab., Canada, Mass., New York. In April and May.

The uniform light gray ground color, the black encircled spots, particularly the elongated claviform and the basal longitudinal line will separate it from other species of the genus, and the first character from *vulgaris*, G. & R.

VI. Observations on North American Moths

BY LEON F. HARVEY, A. M., M. D.

[*Read before this Society, June* 5, 1874.]

NOCTUAE.

Agrotis volubilis *Harvey*.

♂.—This species is allied to the European *A. valligera*, differing by its leather-brown, not olivaceous color, and by the obsolescence of the subterminal line. Eyes naked, all the tibiae spinose, antennae ciliated, palpi externally dark brown, nearly black, internally much lighter, head light brown, thorax very pale with a brown collar; one segment of the abdomen, near the thorax, quite brown, with the rest and anal tuft light brown; beneath darker, with the sides approaching to black. Basal half-line irregular, black; t. a. line thrice outwardly convex, lower convexity being very acute, passing far beyond the other convexities; a broad black band arising from the body intersects and crosses the t. a. line, being longer than the similar line in *A. valligera;* the t. p. line is evenly scalloped outwardly, being fainter than the other lines; terminal line geminate, inner dark and outer light shaded; subterminal space darkly shaded, a third below the costal border dark intensified above the spots. The orbicular spot is broader and more even than in *A. valligera*, having a light center; reniform regular, whilst in *A. valligera* it is somewhat scroll-shaped; the space between the spots is nearly black, in *A. valligera* it is a rather light brown; fringes concolorous. Beneath, cinereous, costa dark, terminal line present. Secondaries whitish, with superior and posterior portions shaded with fuscous, terminal line geminate. Beneath pale shaded, with discal spot; t. p. line and terminal line obvious, fringes white.

♀.—Both the wings and body parts darker, blackish, with a dark purple tinge; markings about the face blackish brown; thorax purple-gray, with a black collar. The space between the body and the reniform spot is nearly black, the orbicular spot is nearly twice the length and much narrower than in the ♂, with dark center, and clearly defined black margin, reniform more irregular and darker. The terminal line geminate. All the other lines nearly obsolete, slight transverse markings beneath. Secondaries darker than *A. valligera*—a trace of discal spot.

Expanse, ♀ 36, 37; ♂ 35 m. m. *Hab.*, Buffalo (Frank Zesch); New York (C. T. Robinson).

Mamestra rosea, *Harvey.*

♂.—This is a stout species with hairy eyes and unarmed tibiae. The abdominal tufts are confined to the basal segment, and the thoracic tufts are not very obvious. Antennae simple, bristled beneath. The color is unusually pale. It is a very light and pale testaceous reddish; the thorax, head and basal tuft deep brownish red. The fore wings have the terminal space deep red, with the outer portion of the subterminal space deep brownish red, and these marginal shades contrast with the pallor of the rest of the wing, so that we are reminded of the species of *Heliothis.* T. a. line single, thrice waved outwardly oblique, deep reddish. Claviform outlined with the same shade, while the annuli of the stigmata are similar, merely fine reddish lines; the reniform includes an inferior blackish stain. The diffuse reddish median shade is quite noticeable. Stigmata large; orbicular circular; reniform moderately outwardly excavate. T. p. line a distinct interspaceally festooned reddish line, not running suddenly inwardly below median vein, nor much exserted opposite the cell, approaching the t. a. line at internal margin, owing to the greater obliquity of the latter. Fringes reddish, checkered with deeper red. Hind wings very pale, with faint exterior transverse lines and terminal brighter dustings. Beneath, very pale with reddish borderings and double exterior reddish lines and discal point on secondaries. Abdomen pale, shaded with fuscous.

Expanse, 40 m. m. *Hab.,* Maine (Prof. Packard).

Mamestra lilacina, *Harvey.*

♀.—A rather wide-winged species with hairy eyes and unarmed tibiae and with somewhat slender body parts, weakly tufted. It is allied to *M. brassicae* and *M. Farnhami.* The primaries are blackish, with lilac-gray shadings. Basal half-line distinct, black, irregular. T. a. line geminate, waved, blackish, the outer line the more distinct with distinct gray filling. The orbicular is oblique, large, gray, with a darker central shade, and below it, beyond the claviform and beneath the median vein at the base of vein 2, is a pale gray shade, extending to the median shade line, and similar to what is displayed by *M. Farnhami.* Claviform concolorous, with distinct black defining line. Reniform erect, gray, with a central darker annulus. T. p. line geminate, lunulate, its inner black scalloped line distinct, with gray filling. Subterminal space shaded with gray, more obviously inferiorly. Subterminal line pale, distinct, continued, with a strong costal deflection bending inwardly; a distinct apical gray patch surmounting the blackish concolorous terminal space. Fringes dark with a darker hair line, and very narrowly cut with pale at the extremities of the veins. Hind wings fuscous, deeper shaded terminally, with a faint fuscous rivulous exterior line and discal shade. Beneath fuscous, sprinkled with gray shades and double, more or less distinct common lines and discal marks.

Expanse, 35 m. m. *Hab.,* Brewsters, N. Y. (C. T. Robinson).

Taeniocampa pacifica, *Harvey.*

Under the Number 27, and with the memorandum attached "February 13, 1874, Sanzalito," Mr. Jas. Behrens sends three specimens (♀s) of a species with hairy eyes and allied to our Eastern *T. alia* and the European *T. instabilis*. Compared with *T. alia* the species from the Pacific slope differs by its thinner squamation, its more obscure tint and the narrower black-filled reniform. In none of the three specimens is there any trace of the orbicular. The tint is not always the same; two specimens are rather pale, dingy yellowish brown; the third has some of the brighter tintings of *T. alia*. The t. p. line is indicated by black points, to which black and white points succeed on the subterminal space. In size the species is like *T. alia*, while the ornamentation is very similar.

Glaea olivata, *Harvey.*

♀.—Eyes naked, with lashes; tibiae unarmed; abdomen rather flattened. The species is of a delicate olive-brown, with the lines on the fore wings above pale, even and continuous. Primaries rather dark olivaceous brown to the subterminal line, with a fine admixture of black scale points not disturbing the general shade of the wings; terminal space paler contrasting by its pallor, terminal line waved, fine, the fringes again darker with a blackish shade at base. T. a. line even, rather strongly outwardly oblique, a little outwardly projected on costal vein, on internal margin nearer to the t. p. line than to the base of the wing. Stigmata large, concolorous, with pale annuli, like the transverse lines, upright, the orbicular spherical, the reniform but very slightly excavate. T. p. line not very arcuate, nor projected opposite the cell. Subterminal line irregular, brought into relief by the contrasting tint of the terminal space. Hind wings fuscous, dark, not greatly contrasting with the primaries in general color, with a reddish suffusion on the fringes. Body concolorous with wings above. Beneath the body parts and wings are more reddish, powdered with black scales; a fuscous line and discal point on the uniformly red-tinted secondaries.

Expanse, 38 m. m. *Hab.,* California. Mr. Behrens, Number 9 September 20th.

In this species the lashes are black and distinct. The Easte species, referred by Mr. Grote to Orthosia, have the abdomen som what flattened, especially O. apiata, but the lashes to the eyes not discriminated by their color.

Orthodes griseocincta, *Harvey.*

♀.—Obscure, purply blackish, without any red tint; the marking coarse. Eyes hairy. Basal half-line accompanied by a broad griseous alone distinct, waved. T. a. line perpendicular, waved, black, precede

by a broad griseous shade. Stigmata obsolete; the reniform indicated by a few pale scales. Median shade line hardly apparent, approximate to the t. p. line, the latter more even, more faintly filled in with griseous, slightly arcuate. Subterminal line indistinct; terminal space but very little paler than the rest of the wing; fringes concolorous. Secondaries blackish fuscous with paler fringes. Beneath the wings are pale, soiled, yellowish-white, irrorate with black scales and with the discal point and exterior fuscous line marked on secondaries. Body parts concolorous with the wings.

Expanse, 32 m. m. *Hab.,* Easton, Pa. Mr. Stultz, No. 421.

GEOMETRAE.

Eudropia Warneri, *Harvey.*

♀.—A beautiful, umber-shaded moth. Antennae simple, white above, brown beneath, palpi porrect, head brown, thorax grayish-white suffused with a burnt umber tinge. Abdomen concolorous. Primaries broad, posterior border boldly convex, surface white, but profusely covered with umber-colored points. T. a. line convex outwardly, narrow on the costa, widening opposite the cell, continuing very broad to the inferior border, being of a burnt umber color, with a light shade in its concavity. T. p. line white, evenly broad, convex outwardly, strongly exserted at convexity of posterior border, dark umber shaded in its concavity, forming the line of a strung bow; outside of the t. p. line a somewhat light umber shade, but strongly marked at the center and inferior border of the wing, forming two conspicuous spots. A very distinct black discal spot; a white broad line, running from the extreme convexity of t. p. line to the apex of the wing, having on its outside for half the distance a finer umber line; fringes of an umber color. Beneath the surface of a mottled ocherous, resembling the under surface of *E. hypochraria,* but less brilliantly colored, the discal spot brown, all the lines faintly marked; spot at convexity of the t. p. line quite obvious; fringes darker than above, contrasting strongly with the lighter shade of the wing. Secondaries lighter in shade than the primaries; a black discal spot; t. p. line clouded white, with an inner and outer umber-shaded margin, more distinct at anal angle; fringes same as the upper surface of the primaries. Beneath, in color resembling the under surface of the primaries; arcuated line and discal spot present; fringes concolorous with fringes of under surface of the primaries; fringes on the inferior border of secondaries of a delicate white.

Expanse, 35 m. m. *Hab.,* Canaan Four Corners, N. Y. L. F. Harvey.

It gives me pleasure to dedicate this species to Miss Warner, who in the pages of "Queechy," has given to the locality of its capture a "Wide, Wide World" reputation.

VII. Additions to the "List of North American Noctuidae"

BY AUG. R. GROTE.

[*Read before this Society July 3, 1874.*]

The discovery of new species since the publication of the "List," and the reception of fresh material by this Society, allows me to increase and correct it.

I. *The genera allied to Taeniocampa, catalogued on pages 22 and 23 of the "List."*

The following synoptical table is imperfect, but may assist in the identification of the genera. I have no perfectly preserved specimens of *Ceramica exusta,* and the structural difference from *Taeniocampa* is not apparent to me. Perfectly preserved specimens, with the thoracic vestiture intact, are especially necessary in studying the *Noctuae.* I have hitherto mistaken the type of Pachnobia.

Eyes hairy:

Head prominent, vestiture hairy, form slender, thorax untufted ... **Orthodes.**
Head applied to the thorax, collar distinctly lobed, thorax defined at the sides and tufted in front .... **Perigrapha.**
Head sunken, vestiture woolly, form stout, thorax untufted { **Taeniocampa.** **Ceramica.**

Eyes naked:

Male antennae simple, wings comparatively wide .... **Matuta.**
Male antennae toothed, wings comparatively narrow .... **Pachnobia.**

ORTHODES, *Guenée* (1852).

Type: Orthodes infirma *Guen.*

infirma *Guen.*, Noct. 1, p. 375 (A).
griseocincta *Harvey*, Bul. Buf. Soc. Nat. Sci. 2, p. 120.
† **cynica** *Guen.*, Noct. 1, p. 375.
† **nimia** *Guen.*, Noct. 1, p. 376.
† **vecors** *Guen.*, Noct. 1, p. 376.

Eastern States, southward.

* PERIGRAPHA, *Lederer* (1857).

Type: Noctua i-cinctum *S. V.*

Normani *Grote*, Can. Ent. vol. 6, p. 115.
innexa *Grote*.[1]

Canada, southward.

* TAENIOCAMPA, *Guenée* (1841).

Type: Noctua stabilis *S. V.*

pacifica *Harvey*, Bul. Buf. Soc. Nat. Sci., Vol. 2, p. 120.
alia *Guen.*, Noct. 1, p. 354; ? *Orthos. instabilis* Fitch, Trans. N. Y. Agr. Soc. 16, 343.
† **hibisci** *Guen.*, Noct 1, p. 355 (described from Abbot's MS. figures).
oviduca *Guen.*, Noct. 1, p. 357.
† **styracis** *Guen.*, Noct. 1, p. 357 described from Abbot's MS. figures).

California, Canada, southward.

CERAMICA, *Guenée* (1852).

Type: Ceramica exusta *Guen.*

picta (*Harris*), Ins. Inj. Veg. p. 452; *Cer. exusta* Guen., Noct. 1, p. 344, Pl. 5, fig. 9.
† **vindemialis** *Guen.*, Noct. 1, p. 344.
† **w-album** *Guen.*, Noct. 1, p. 345.

Canada, southward.

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[1] **Perigrapha innexa n. s.**

♂.—At first sight the species might be referred to *Orthodes*, but the head is more appressed, the thoracic vestiture more dense, the sides of the thorax defined and the patagic apices sharp. There is a distinct cresting behind the collar and a thick gathering of scales on the thorax behind, possibly also distributed on the basal abdominal segment. The palpi very slightly exceed the front; the 3d article minute, shortly scaled. Antennae simple, brushlike, both of our species differing in this respect from the European. The hairy eyes appear to have no lashes. The color is an olivaceous wood brown, not unlike *O. infirma*, but darker. All the lines are threadlike, continuous, distinct, whitish or pale yellowish. The veins are accented. Basal half-line even. T. a. line with an inward dentation on the cell to median vein, below which it is even, slightly arcuate. Orbicular and reniform moderate, concolorous, with narrow pale annuli; reniform erect, constricted medially. T. p. line running outwardly longitudinally below the costa to a point a little beyond the second costa-apical dot and thence evenly downwardly, crossing the nervules, a little inwardly bent between veins 4 and 1, to internal margin. Subterminal line brought very near the margin, even, slightly inwardly notched on vein 2, pale like the other lines. Terminal space more blackish, a little frosted with pale scales. Terminal line fine, black, interrupted. Fringes concolorous, with a paler median line and pale points at base opposite the termination of the nervules. Hind wings like those of *P. Normani*, whitish hyaline with soiled veins and undefined fuscous terminal shade. Thorax like fore wings. Costal edge of primaries straight.

Expanse 20 m. m. *Habitat*, Texas, E. L. Graef, Esq.

MATUTA, *Grote* (1874).

Type: Matuta Catherina *Grote.*

Catherina *Grote*, Can. Ent. vol. 6, p. 116.

Canada.

PACHNOBIA, *Guenée* (1852).

Type: Noctua carnea *Thunb.*

cornuta *Grote*, Bul. Buf. Soc. Nat. Sci. vol. 2, p. 68.
†* **carnea** (*Thunb.*), Diss. 4, p. 56 (*Noctua*); Guen., Noct. 1, p. 342 (*Pachnobia*); Möschl., W. E. M. 4, p. 361.

California, Labrador.

II. *The genera allied to Orthosia, catalogued on pages* 25 *and* 26 *of the "List."*

The following synoptical table of the genera may be of use. I have formerly not distinguished the genus Jodia (*Oporina* Boisd., Led.). The species retained under Xanthia and Scopelosoma will need a later revision.

Eyes naked with lashes:

Thorax untufted, abdomen conical.............................. **Orthosia.**
id., abdomen flattened .... **Glaea.**
Thorax with a pointed tuft, palpi projected and prominent............ **Jodia.**
id., palpi improminent { .... **Xanthia.**
{ .... **Scopelosoma.**

* ORTHOSIA, *Ochs.* (1816).

Type: Noctua lota *Linn.*

* **circellaris** (*Hufn.*); *ferruginea* S. V., S. 86.
ferruginoides (*Guen.*), Noct. 1, p. 398 (*Xanthia*); *bicolorago* ‡ Walk., C. B. M., Noct. p. 464; G. & R., Trans. Am. Ent. Soc. 2, p. 78; *Xanthia spurcata* Walk., C. B. M., Noct., p. 749.
† **bicolorago** (*Guen.*), Noct. 1, p. 397 (*Xanthia*); An. var. spec. praec.?
ralla (*G. & R.*), Trans. Am. Ent. Soc. 1, p. 346 (*Xanthia*), Pl. 7, fig. 49.
euroa (*G. & R.*), Trans. Am. Ent. Soc. 4, p. 431 (*Xanthia*); *X. puta* | G. & R., Trans. Am. Ent. Soc. 1, 347, Pl. 7, fig. 50.

† **chloropha** (*Hübn.*), Zutr. 1, No. 37, figs. 73, 74 (*Xestia*).
purpurea *Grote.*[2]
† **insciens** *Walk.*, C. B. M., Noct., p. 746.
Canada, southward, and California.

* JODIA, *Hübner* (1816).

Type: Noctua croceago *S. V.*

rufago *Hübn.*, Zutr. 1, figs. 61, 62, S. 15; Verz. S. 234, No. 2341; Guen., Noct. 1, p. 392 (*Xanthia*).
Atlantic District.

GLAEA, *Hübner* (Tentamen).

Type: Noctua vaccinii *Linn.*

† **anchocelioides** (*Guen.*), Noct. 1, p. 384 (*Cerastis*).
viatica *Grote*, 6th Ann. Rep. Peab. Acad. Sci. p. 33 (*Orthosia*).
decliva *Grote*, 6th Ann. Rep. Peab. Acad. Sci. p. 34 (*Orthosia*).
inulta *Grote*, 6th Ann. Rep. Peab. Acad. Sci. p. 34 (*Orthosia*); Bul. Buf. Soc. Nat. Sci. 2, p. 77, Pl. 1, fig. 9.
apiata *Grote*, 6th Ann. Rep. Peab. Acad. Sci. p. 34 (*Orthosia*); Bul. Buf. Soc. Nat. Sci. 2, p. 77, Pl. 1, fig. 8.
olivata *Harvey*, Bul. Buf. Soc. Nat. Sci. 2, p. 120.
Canada, southward, and California.

* XANTHIA, *Hübner* (Tentamen).

Type: Noctua fulvago *Linn.*

aurantiago *Guen.*, Noct. 1, p. 394, Pl. 7, fig. 1.
* **gilvago** (*S. V.*); Grote, Proc. Ent. Soc. Phil. 3, p. 95.
†* **silago** (*Hübn.*); Walk., C. B. M., Noct., p. 461.
ceromatica *Grote*, Bul. Buf. Soc. Nat. Sci. 2, p. 70 (*Scopelosoma*).
Canada, southward.

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[2] **Orthosia purpurea, n. s.**

♂ ♀.—Allied to the European *O. litura*, differing but slightly in general tint, being more purplish. The markings are less distinct, the t. a. line not accented on costa, the orbicular smaller, the spots wider apart, the subterminal line a parallel succession of rounded points, not elongate as in the European species. The dark costal shades, which precede the s. t. line in both species, are less prominent in *O. purpurea*. The hind wings are paler in the latter species and more warmly tinted. Beneath, the color is light vinous with the common line and discal marks, so evident in *litura*, extremely faint. The male antennae have a thick cilial fringing. The pattern of the ornamentation is exceedingly similar in the two species and seems merely to differ as above given. In *O. purpurea* the reniform is concolorous, enclosing a blackish inferior stain; in my specimens of *O. litura*, this spot is uniformly darker than the wing.

Expanse, 31, 32 m. m. *Habitat*, California. Mr. Behrens, No. 3, "Oct. 22d."

SCOPELOSOMA, *Curtis* (1840).

Type: Noctua satellitia *Linn.*

Graefiana *Grote*, Bul. Buf. Soc. Nat. Sci. 2, p. 69.

vinulenta *Grote*, Proc. Ent. Soc. Phil. 2, p. 440 (*Dichagramma*), Pl. 9, fig. 6; Bul. Buf. Soc. Nat. Sci. 2, p. 70 (*Scopelosoma*).

Morrisoni *Grote*, Bul. Buf. Soc. Nat. Sci. 2, p. 70.

sidus *Guen.*, Noct. 1, p. 386; Grote, Bul. Buf. Soc. Nat. Sci. 2, 71.

Walkeri *Grote*, Proc. Ent. Soc. Phil. 2, p. 439 (*Dichagramma*); *id.* Bul. Buf. Soc. Nat. Sci. 1, p. 192 (*Scopelosoma*); *id.* l. c. 2, p. 71.

Canada to Texas.

III. *References omitted in the "List."*

To the species Agrotis bicarnea, on page 9, line 26, must be added the reference: *Feltia ducens* Walk., C. B. M., Noct., p. 203.

To the species Hadena arctica, on page 14, line 33, must be added the reference: *Hadena amputatrix* Fitch, Trans. N. Y. Agr. Soc. 16, 425.

Under the genus Melicleptria must be added, on page 35, after the second line, the species:

jaguarina (*Guen.*), Noct. 2, p. 184 (*Anthoecia*), Pl. 9, fig. 11; Grote, Proc. Ent. Soc. Phil. 3, p. 528.

The following genus must be omitted from the Lithosiinae (where it is referred by Zeller) on account of the presence of simple eyes; it cannot be placed with the Tortricidae (where it is referred by Fitch) from the neurational characters. It best agrees with the Noctuidae, and may find its place in the "List" on page 28, after Adipsophanes.

NOLAPHANA, *Grote* (1873).

Type: Brachytaenia malana *Fitch.*

malana (*Fitch*), Tr. N. Y. State Agr. Soc., 1855, p. 473 (*Brachytaenia*); Grote, Bul. Buf. Soc. N. S. 1, p. 169 (*Nolaphana*).

Zelleri *Grote*, Bul. Buf. Soc. Nat. Sci. 1, p. 169; *Nola malana* † Zeller, Verh. z.-b. Gesell., S. 454.

Eastern and Middle States.

VIII. Land and Fresh Water Shells of the State of New York

BY JAMES LEWIS, MOHAWK, N. Y.

[*Read before this Society, July* 3, 1874.]

So far as relates to the Molluscs found within its borders, the State of New York may be considered as embracing portions of two distinct areas, each, in a measure, characterized by a fauna of its own. This is more especially true of the Molluscs found in the larger rivers, but less conspicuously apparent in the Terrestrial Molluscs.

In the attempts of early writers to classify the Molluscs of the State of New York a considerable number of species then not known to occur within the limits of the State were tabulated as "Extra Limital." More recent investigations have shown that many species then regarded as extra limital really occur within the borders of the State. Many of the species to which this remark applies are such as are known to occur in the system of drainage of which the Ohio River is the grand trunk. Some of these species are found in the streams flowing into the great lakes in the western part of the State.

In more eastern and central portions of the State occur a few species which apparently belong to the Ohio Basin, but which have by some means been colonized where found. But the larger portion of the species of the waters of the eastern part of the State are such as are classed in the *fauna* of the "Atlantic slope."

There are among the land shells indications of two if not of three distinct *faunæ*. The minor aquatic species also offer similar indications. But in a paper, the principal purpose of which is to collate facts relative to *geographical distribution*, it may not be necessary to enter at large upon a discussion of special *faunæ*. It will, perhaps, be sufficient to state that we find within the State representatives of the following *faunæ*, viz.:

1st. Fauna of the Atlantic slope.
2d. Western Fauna.
3d. Sub-boreal or Circumpolar Fauna.

Writers on the Molluscs of the United States and Canada have sufficiently characterized these several *faunae*, and students who may desire to look further into this subject may find it sufficiently amplified in the writings of Dr. Lea, Dr. Gould, Dr. Binney, W. G. Binney, Say, Bland, and other distinguished writers whose names are widely associated with American Conchology.

In the few remarks it may be proper to make respecting Classification it will suffice to say that the systems adopted by recent American writers have been retained with only slight variations. The few essential changes which it has been thought expedient to make embrace restitutions and a recognition of the fact that species have not in all cases been classified with a proper understanding of their anatomy. The species embraced in the following tables are compiled principally from the results of explorations made within the last fifteen years:

About thirteen years ago, assisted by Hon. G. W. Clinton, Mr. W. W. Stewart and others, the late Coleman T. Robinson (one of the founders and early patrons of the Buffalo Society of Natural Sciences) compiled a list of species collected in the western part of the State, principally in the immediate vicinity of Buffalo. Mr. Robinson's manuscript appears to be very faithfully compiled, and leaves very little to be done to complete the work in the part of the State to which it relates.

The late Prof. C. Dewey, of Rochester, in a paper[1] accompanying a donation of shells to the State Cabinet at Albany, gives a list of species found in the vicinity of Rochester, and in other portions of Western New York. Mr. Truman H. Aldrich, while a student of the Rensselaer Polytechnic Institute, at Troy, compiled a "Partial list of Shells found near Troy, N. Y.," which was embodied in the Twenty-second Annual Report on the State Cabinet of Natural History.

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[1] In Ninth Annual Report of the Regents of the University of the State of New York on the condition of the State Cabinet, etc., etc.

The writer of this paper has at various times prepared catalogues of the shell-bearing Molluscs of Herkimer and adjacent counties. He has also enjoyed correspondence with many active collectors whose manuscripts and specimens (hitherto unrecorded) have, with the preceding, contributed toward the present paper.

Among the gentlemen to whom these acknowledgments are due may be mentioned

Dr. T. R. Ingalls, late of Greenwich, Washington county.

Dr. A. J. Skillton, late of Troy.

Col. E. Jewett, Lockport.

Mr. W. E. Yager, Oneonta.

Dr. Caleb Green, Homer, Cortland county.

Dr. Wm. H. Brown, Cedarville (formerly of Litchfield, Herkimer county).

Dr. —— Hubbard, late of Staten Island.

In addition to these sources of information, it has been necessary to consult various Conchological works of American writers. It will suffice to mention the following:

Observations on the Genus Unio, etc., by Isaac Lea, LL. D.

Synopsis of the Family Naiades, 1870, by Isaac Lea, LL. D.

Rectification of Conrad's Synopsis (reprint), by Isaac Lea, LL. D.

Terrestrial Molluscs, by Amos Binney, M. D.

Writings of Thomas Say (reprint), by W. G. Binney.

Land and Fresh Water Shells,[2] by W. G. Binney and Thos. Bland.

Conchological Journal, G. W. Tryon, Jr.

Strepomatidae,[3] by G. W. Tryon, Jr.

Corbiculadae,[4] by Temple Prime.

And various fragmentary papers by W. G. Binney and others.

Not having De Kay's original work on the Shells of the State of New York, it will be understood that the compiler of this paper has depended almost entirely on *original sources of information* for all that is here presented.

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[2] Smithsonian Miscellaneous Collections, Nos. 143, 144, 194.

[3] Smithsonian Miscellaneous Collections, No. 253.

[4] Smithsonian Miscellaneous Collections, No. 145.

In citing authorities for *local distribution* the name of the person quoted refers to the locality associated therewith in the above lists, unless otherwise indicated.

It had been hoped that the results of contemplated explorations in the head waters of the Ohio in Western New York might have been reached in season to confirm and extend the list of species here presented. Though this hope is unfortunately deferred, it is scarcely to be expected that more than a very few species would have been reached not already known to belong to this State. It is, however, *probable*, that an undescribed species of *Unio* occurs in the outlet of Chautauqua Lake; and that one, perhaps two species of *Pomatiopsis*, may be found in some of the western counties. Hopes are entertained that certain species of land shells somewhat indefinitely credited by Binney and Bland to this State, may be found within its limits; no other record of them is available for present purposes. Though this paper has been made as comprehensive as could be expected from the material available, it is probable that species have been omitted which are known to others to belong to the fauna of New York. At some future day, perhaps, the State of New York may authorize a revision of the work already published under its patronage on this subject. When this work shall be decided upon, the value of this and other similar papers will be at once apparent.

GASTEROPODA PULMONATA.

Suborder GEOPHILA.

Family HELICIDAE.

Subfamily VITRININAE.

VITRINA, *Drap.*

V. limpid, *Gould.*	Aldrich; Lewis.

HELICODISCUS, *Morse.*

H. lineatus, *Say.*	Aldrich; Brown; Ingalls; Lewis.

MACROCYCLIS, *Beck.*

M. concava, *Say.*	Aldrich; Ingalls; Lewis; Robinson.

LIMAX, *Linn.*

Subgenus EULIMAX, *Moq-Tand.*

E. flavus, *Linn.*	Lewis.
E. agrestis, *Linn.*	Lewis.
E. campestris, *Binney.*	Lewis.

Subgenus PATULA, *Haldeman.*

P. solitaria, *Say.*	Western New York (Jewett).
P. alternata, *Say.*	Aldrich; Ingalls; Lewis; Robinson.
P. perspectiva, *Say.*	Brown; Lewis; Robinson.
P. striatella, *Anth.*	Aldrich; Ingalls; Lewis; Robinson.

Subgenus STROBILA, *Morse.*

S. labyrinthica, *Say.*	Hubbard; Ingalls; Robinson.

Subgenus STENOTREMA, *Raf.*

S. hirsuta, *Say.*	Near New Hartford (Jewett).
S. monodon, *Rackett.*	Aldrich; Brown; Ingalls; Lewis; Robinson.

Subgenus TRIODOPSIS, *Raf.*

T. palliata, *Say.*	Aldrich; Brown; Ingalls; Lewis; Robinson.
T. tridentata, *Say.*	Aldrich; Brown; Ingalls; Lewis.
T. fallax, *Say.*	Quoted by Robinson, who may have mistaken a small variety of *tridentata.*

Subgenus MESODON, *Raf.*

M. albolabris, *Say.*	Common in every part of the State.
M. albolabris, *Say* (dentate var.)	Brown.
M. exoleta, *Binney.*	Bobinson; W. G. Binney.
? **M. multilineata,** *Say.*	W. G. Binney.
? **M. elevata,** *Say.*	W. G. Binney.
M. dentifera, *Binney.*	Brown; Lewis; New Hartford (Jewett); Buffalo (Stewart).
M. thyroides, *Say.*	Aldrich; Brown; Lewis; Robinson.

? **M. profunda,** *Say.*	W. G. Binney.
M. diodonta, *Say.*[5]	Brown; Lewis; Yager.

Subgenus VALLONIA, *Risso.*

V. pulchella, *Müller.*	Common in nearly all parts of the State.

PUNCTUM, *Morse.*

P. minutissimum, *Lea.*	Brown; Lewis; Jewett.

Subfamily PUPINAE.

CYONELLA, *Jeffreys.*

Subgenus ZUA, *Leach.*

Z. subcylindrica, *Linn.*	Aldrich; Brown; Ingalls; Lewis.

PUPA, *Drap.*

Subgenus PUPILLA, *Leach.*

P. muscorum, *Linn.*	Robinson; Crownpoint (Adams in "Vermont Shells").
P. pentodon, *Say.*	Lewis.

Subgenus LEUCOCHILA, *Alb. & Mart.*

L. fallax, *Say.*	Crownpoint (Adams[6]).
? **L. armifera,** *Say.*	Binney and Bland.
L. contracta, *Say.*	Lewis.
L. corticaria, *Say.*	Lewis.
? **L. rupicola,** *Say.*	Binney and Bland.

VERTIGO, *Müller.*

Subgenus ISTHMIA, *Gray.*

? **I. Gouldii,** *Binney.*	Hubbard; Binney and Bland.
I. Bollesiana, *Morse.*	Brown; Lewis.

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[5] Under the subgenus *Mesodon* it becomes proper to restore the name given to this species by Mr. Say. Dr. Binney's designation would read *Mesodon Sayii*, Binney. It will unquestionably rank as a synonym in recent classifications.

[6] Adams' Vermont Shells.

? **I. milium,** *Gould.*	Binney and Bland.
I. ovata, *Say.*	Hubbard; Lewis.
I. ventricosa, *Morse.*	Brown; Lewis.
I. simplex, *Say.*	Brown; Lewis.

SUCCINEA, *Drap.*

Subgenus SUCCINEA, *Drap.* s. str.

S. ovalis, *Gould.*	Aldrich; Brown; Ingalls; Lewis; Robinson.
S. avara, *Say.*	Ingalls; Lewis; Robinson.
S. aurea, *Lea.* (?)	Staten Island, Hubbard. (Probably not authentic.)
S. aurea, *Lea.* (?)	Little Lakes, Lewis. (Probably not clearly identified.)
S. obliqua, *Sar.*	Aldrich; Ingalls; Lewis; Robinson.
S. Totteniana, *Lea.*	Aldrich; Hubbard; Ingalls; Lewis.

Family ARIONIDAE.

ARION, *Ferussac.*

Subgenus PROLEPIS, *Moq-Tand.*

? **P. fuscus,** *Müller.*	Binney and Bland.

Subfamily ZONITINAE.

ZONITES, *Montf.*

Subgenus OMPHALINA, *Raf.*

O. fuliginosa, *Grif.*	Aldrich; Brown; Ingalls; Lewis; Robinson.
O. inornata,[7] *Binney.*	Brown; Lewis; Jewett (at New Hartford).
O. Wardiana,[8] *Lea.*	Brown; Lewis (*Zonites ligerus*, B. & B.).
O. ligera, *Say* (*Lea*).	Brown; Lewis; Clarence, N. Y. (W. W. Stewart). [*Zonites intertextus*, B. & B.]
O. cellaria,[9] *Müller.*	Sea-port towns, B. & B.; Hubbard; (Buffalo) Clinton.

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[7] Bland entertains doubts if the species referred to *inornata* by Binney, is identical with Say's species of that name.

[8] This is Dr. Binney's "Helix ligera of Say." Say's original *ligera* is a Missouri shell. It does not appear in any public record that *ligera* has been properly identified or authenticated by reference to *original types*. Mr. Lea appears to have claims to this species, strongly sustained by the early traditions which refer the shell which Dr. Binney calls *intertexta* to *ligera*, Say.

[9] O. cellaria has recently been detected at Buffalo by Mr. Wm. W. Stewart.

O. nitida, *Müller.*	Aldrich (at Cherry Valley); Ingalls; Lewis; Robinson.
O. arborea, *Say.*	Aldrich; Brown; Ingalls; Lewis; Robinson.
O. viridula, *Menke.*	Ingalls; Lewis.
O. indentata, *Say.*	Lewis. (Probably a *common* but *not abundant* species.)
O. minuscula, *Binney.*	Brown; Lewis.
O. ferrea, *Morse.*	Brown.
O. exiguus, *Stimpson.*	Brown.

Subgenus **VENTRIDENS,** *W. G. Binney.*

V. multidentata, *Binney.*	Aldrich; Brown.
V. suppressa, *Say.*	Hubbard.

Family PHILOMYCIDAE.

TEBENNOPHORUS, *Binney.*

T. Carolinensis, *Bosc.*	Lewis; Robinson.
T. dorsalis, *Binney.*	Lewis.

Suborder LIMNOPHILA.

Family AURICULIDAE.

ALEXIA, *Leach.*

A. myosotis, *Drap.*	Hubbard; B. & B., Marine coast.

CARYCHIUM, *Müller.*

C. exiguum, *Say.*	Aldrich; Ingalls; Lewis. [Though not quoted by Robinson this species undoubtedly occurs in Western New York.]

Subfamily MELAMPINAE.

MELAMPUS, *Montf.*

M. bidentatus, *Say.*	Hubbard; B. & B., Marine coast.

Family **LIMNAEIDAE.**

Subfamily LIMNAEINAE.

LIMNAEA, *Lamarck.*

L. stagnalis, *Linn.*	Ingalls; Lewis; Robinson.

Subgenus **RADIX,** *Montf.*

R. ampla, *Mighels.*	Aldrich.
R. columella, *Say.*	Ingalls; Lewis.

Subgenus **BULIMNEA,** *Hald.*

B. megosoma, *Say.*	Lake Champlain (Ingalls), [Adams' Vermont Shells.]

Subgenus **LIMNOPHYSA,** *Fitz.*

L. reflexa, *Say.*	B. & B., Western New York.?
L. elodes,[10] *Say.*	Aldrich; Ingalls; Lewis; Hubbard.
L. desidiosa, *Say.*	Aldrich; Ingalls; Lewis.
L. emarginata, *Say.*	Owasco Lake (Lewis). Probably will be found in other lakes.
L. catascopium, *Say.*	Ingalls; Lewis.
L. umbilicata,[11] *Adams.*	Aldrich; Ingalls; Lewis.
L. pallida, *Adams.*	Lake Champlain (Adams); Little Lakes (Lewis).
L. humilis, *Say.*	Aldrich; Ingalls; Lewis.

Subgenus **ACELLA,** *Hald.*

A. gracilis, *Jay.*	Aldrich (in letters); Ingalls; Lewis; Squaw Island, Niagara River (David F. Day).
A. galbana, ? *Say.*	(Fossil) Lewis. [In calcareous tufa.]

PHYSA, *Drap.*

P. Hildrethiana, *Lea.*	Robinson.
P. ancillaria, *Say.*	Aldrich; Ingalls; Owasco Lake (Lewis).

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[10] Say's name for this species is retained, because they who identify our shells with analogous European forms do not preserve the parallel by identifying *catascopium* with *pereger*, as should follow, as a natural sequence. The full discussion of this topic would require too much space at this time.

[11] Eastern collectors hesitate to place *umbilicata* in the synonymy of *L. caperata*, Say, which seems to be related to *umbilicata* as *reflexa* is to *elodes*.

P. heterostropha, *Say.*	Aldrich; Ingalls; Lewis; Robinson.
P. Niagarensis, *Lea.*	Niagara River Lea.

BULINUS, *Adanson.*

B. hypnorum, *Linn.*	Aldrich; Ingalls; Lewis; Robinson.

Subgenus ISODORA, *Ehrenb.*

I. integra, *Hald.*	W. G. Binney. The specimens quoted G. B. are young of *P. heterostropha.*

PLANORBIS, *Guettard.*

P. lentus, *Say.*	W. G. Binney, in "Land and Fresh Shells."

Subgenus PLANORBELLA, *Haldeman.*

P. campanulatus, *Say.*	Aldrich; Ingalls; Lewis; Robinson.

Subgenus HELISOMA, *Swainson.*

H. trivolvis, *Say.*	Aldrich; Ingalls; Lewis; Robinson.
H. bicarinatus, *Say.*	Aldrich; Ingalls; Lewis; Robinson.

Subgenus MENETUS, *H. & A. Adams.*

M. exacutus, *Say.*	Aldrich; Ingalls; Lewis.

Subgenus GYRAULUS, *Agassiz.*

	Aldrich; Ingalls; Lewis; Robinson.
Gould.	Ingalls.
	Lewis.
	Aldrich; Ingalls; Lewis; Robinson.

SEGMENTINA, *Fleming.*

Subgenus PLANORBULA, *Hald.*

	Aldrich; Ingalls; Lewis; Robinson.

Subfamily ANCYLINAE.

ANCYLUS, *Geoffroy*.

A. fuscus, *Adams.*	Lewis.
A. tardus,[12] *Say.*	Lewis; Robinson? Aldrich?
A. patallelus,[12] *Hald.*	Adams (Vermont); Lewis; Robinson?

GASTEROPODA PECTINIBRANCHIATA.

(OPERCULATA.)

Family VALVATIDAE.

VALVATA, *O. F. Müll.*

V. tricarinata,[13] *Say.*	Aldrich; Ingalls; Lewis; Robinson.
V. sincera, *Say.*	Ingalls; Lewis; Robinson.

Family VIVIPARIDAE.

VIVIPARA, *Lamarck.*

V. contectoides, *W. G. Binney.* Colonized from Illinois (Lewis).

Subgenus MELANTHO, *Bowditch.*

M. decisus, *Say.*	Aldrich; Ingalls; Lewis; Robinson.
M. integer,[14] *De Kay.*	Aldrich; Lewis; Robinson.
M. rufus, *Hald.*	Aldrich; Ingalls; Lewis. This species occurs at *Buffalo,* though not catalogued by Robinson.

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[12] Two species *Ancylus*, not identified by Robinson, may prove to be *tardus* and *parallelus*. A species (not identified) noticed by Aldrich is quite likely to be Say's *tardus*, a species occurring in the Mohawk River in Central New York. Aldrich's specimens were taken from that river at Cohoes.

[13] An elevated variety of this species, destitute of carinae, having the color and nearly the form of *V. virens*, Tryon, occurs in the "Little Lakes" in the southern part of the county of Herkimer! Tryon's species is from Clear Lake, California!

[14] This is De Kay's *Pal. integra*, assuredly; but is it also Say's? There are reasons for believing our shells are simply a variety of *ponderosus*, Say.

Family **RISSOIDAE.**

BYTHINELLA, *Moq-Tand.*

B. obtusa, *Lea.*	Lewis. This species may have been noticed by Robinson under a different name, clearly not tenable.

GILLIA, *Stimpson.*

G. altilis, *Lea.*	Catalogued by Aldrich as *Somatogyrus integer*, Say.

SOMATOGYRUS, *Gill.*

S. subglobosus, *Say.*	Lewis; Robinson. Usually called *S. isogonus*, Say.

AMNICOLA,[15] *Gould and Haldeman.*

A. porata, *Say.*	Cayuga Lake (Say).
A. pallida, *Hald.*	Lake Champlain (Haldeman).
A. Cincinnatiensis, *Anth.*	Lewis. Recorded by Robinson under another name?
A. orbiculata, *Lea.*	Cayuga Lake (Lea).
A. lustrica, *Say.*	Cayuga Lake (Say); Central New York (Lewis).
A. limosa, *Say.*	Delaware River? Southern New York?

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[15] The genus Amnicola seems to have been a source of much difficulty to the students of American Conchology, and is even yet apparently not well understood. Dr. Gould in his Invertebrata of Massachusetts (original edition) seems to have made a tolerable approach to the identification of Say's *porata*. Forms precisely like Massachusetts shells from localities producing shells studied by Dr. Gould, found in various lakes and streams in the State of New York, show that identical species in this genus are wide-spread. The occurrence of *two forms* in Cayuga Lake, both described and located by Say; and the simultaneous occurrence of two forms (meeting Say's text in all but the locality) in numerous small bodies of water within the State of New York, must be regarded as throwing very strong light on questions of identity. The only safe inference that can be drawn from the considerations above stated is, that *pallida* and *orbiculata* are probably varieties of *porata*. As regards *pallida* (referred to Lake Champlain), we find it *probably* associated with a shell which Adams in his "Vermont Shells" correctly identifies as Say's *lustrica*. If this probability should eventually prove to be certainty, it will afford abundant corroboration of all that is inferred from the *association* and *distribution* of species elsewhere. If, on the other hand, it should prove to be true that the shell Adams identified as *lustrica* was not really that species, we can then infer no less than that the shell he had before him was identical with the species now known as *Bythinella obtusa*, Lea.

Family **STREPOMATIDAE**, *Haldeman.*

STREPOMA, *Raf.*

Subgenus **TRYPANOSTOMA**, *Lea.*

T. **subulare**, *Lea.*	Aldrich?[16] Lewis; Robinson.
T. **pallidum**, *Lea.*	Niagara River (Lea).

Subgenus **GONIOBASIS**, *Lea.*

G. **livescens**, *Menke.*	Niagara River (Robinson); Central New York (Lewis).
G. **depygis**, *Say.*	Lake Champlain (Adams); [querie, *livescens?*]
G. **Haldemani**, *Tryon.*	St. Lawrence Riv. (Tryon); [querie, *livescens?*]
G. **gemma**, *De Kay.*	Mud Creek, Onondaga Co.; [querie, *livescens?*]
G. **Virginica**, *Gmelin.*	Aldrich; Lewis; Robinson. Say mentions *virginica* as occurring in Niagara River. May he not have had before him one of the two species of Trypanostoma described by Lea?

Subgenus **ANCULOSA**, *Say.*

A. **carinata**, *Brug.*	Homer, Cortland county (Dr. Green); Oneonta (Yager).

CONCHIFERA LAMELLIBRANCHIATA.

Family **CORBICULADAE.**

SPHAERIUM, *Scopoli.*

S. **simile**, *Say.*	Aldrich; Ingalls; Lewis; Robinson.
S. **solidulum**, *Prime.*	Lewis.
S. **striatinum**, *Lam.*	Aldrich; Ingalls; Lewis; Robinson.
S. **rhomboideum**, *Say.*	Ingalls; Lewis; Robinson.

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[16] Aldrich seems to have been in doubt as to the identity of some of the species observed by him at Troy. His record embraces the following species:

"Melania virginica, *Gmelin.*"
"Melania elevata, *Say.*"
"Melania subularis? *Lea.*"

It is reasonable to suppose that the species he called "*elevata*" may have been that which is tabulated here as G. livescens, *Menke.* The other two species are probably correctly surmised.

S. fabale, *Prime.*	Wayne Co. (Aldrich); Herkimer Co. (Lewis).
S. occidentale, *Prime.*	Brown; Ingalls; Lewis; W. W. Stewart.
S. partumeium, *Say.*	Hubbard; Ingalls; Robinson.
S. transversum, *Say.*	Lewis; Robinson.
S. secure, *Prime.*	Aldrich; Lewis.
S. rosaceum,[17] *Prime.*	Lewis. (Specimens named by Prime.)
S. croceum,[18] *Lewis.*	Herkimer and Otsego counties (Lewis).
S. truncatum, *Linsley.*	Robinson.

PISIDIUM, *Pfeiffer.*

P. virginicum, *Bourg.*	Aldrich; Ingalls; Lewis; Robinson.
P. aequilaterale, *Prime.*	Lewis.
P. compressum, *Prime.*	Aldrich; Ingalls; Lewis. (It occurs far West.)
P. variabile, *Prime.*	Ingalls; Lewis.
P. Novi-Eboracense,[19] *Prime.*	Ingalls; Lewis; Robinson.
P. abditum, *Hald.*	Aldrich; Ingalls; Lewis; Robinson.
P. ferrugineum,[20] *Prime.*	Lewis.
P. ventricosum,[21] *Prime.*	Lewis.

Family UNIONIDAE.

MARGARON, *Lea.* [In "Synopsis," 1870.]

Subgenus UNIO, *Brug.*

U. alatus, *Say.*	Aldrich; Dewey; Jewett; Robinson.
U. anodontoides, *Lea.*	Robinson.
U. Boydianus, *Lea.*	"Observations, &c." Lea.
U. cariosus, *Say.*	Aldrich; Dewey;[22] Ingalls; Lewis; Skillton.

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[17] Mr. Prime refers this species to the Schuylkill River, Pa. Mr. Charles M. Wheatley, whose copper works are located on the bank of that stream, says he has not been able to find this species in the Schuylkill. It is such a species as one might expect would occur only in sluggish ditches or stagnant water, having habits in some respects like those of *partumeium*, of which species it may be only a variety.

[18] Mr. Prime puts *croceum* in the synonymy of *secure*, from which species it differs in habit, occurring most abundantly anchored by a byssus in the interstices of angular gravel in the bed of a stream, while *secure* prefers stagnant water with a soft, muddy bottom. The soft parts of *croceum* are very yellow.

[19] This seems to be a luxuriant development of *P. variabile*.

[20] *P. ferrugineum* seems to be a poorly developed or dwarfed form of *variabile*.

[21] The specimens of *ventricosum*, found in Central New York, are smaller than those found in Massachusetts, and possibly larger than specimens from near Lake Superior, named *rotundatum*, Pr. Being also intermediate in form they forcibly suggest the identity of *rotundatum* with *ventricosum*.

[22] Dewey refers *cariosus* to creeks near Buffalo. May not his reference involve *U. occidens*, Lea, instead of *cariosus?*

U. coccineus, *Lea.*	Robinson.
U. complanatus, *Solander.*	Aldrich; Dewey; Ingalls; Lewis; Skillton.
U. elegans, *Lea.*	Robinson.
U. ellipsis, *Lea.*	Robinson.
U. gibbosus, *Barnes.*	Lewis; Robinson.
U. gracilis, *Barnes.*	Dewey; Robinson. Said to occur in Lake Champlain.
U. heterodon, *Lea.*	Robinson.
U. hippopaeus, *Lea.*	Buffalo River (W. W. Stewart).
U. iris, *Lea.*	Dewey.
U. ligamentinus, *Lam.*	Robinson.
U. luteolus, *Lam.*	Dewey; Lewis; Robinson.
U. multiradiatus, *Lea.*	Robinson.
U. nasutus, *Say.*	Aldrich; Ingalls; Robinson.
U. Novi-Eboraci, *Lea.*	Dewey; Jewett (Lockport); Robinson.
U. occidens, *Lea.*	Robinson.
U. ochraceus, *Say.*	Aldrich; Lewis; Skillton.
U. parvus, *Barnes.*	Robinson.
U. phaseolus, *Hild.*	Robinson.
U. pressus, *Lea.*	Aldrich; Ingalls; Lewis (Owasco Lake outlet); Robinson.
U. pustulatus, *Lea.*	Robinson.
U. radiatus, *Lam.*	Aldrich; Dewey; Ingalls; Jewett; Lewis; Skillton.
U. rectus, *Lam.*	Dewey; Ingalls (Lake Champlain); Robinson
U. rosaceus, *De Kay.*	Dewey; Jewett.
U. rubiginosus, *Lea.*	Dewey; Robinson.
U. spatulatus, *Lea.*	Robinson.
U. Tappanianus, *Lea.*	Aldrich; Lewis; Skillton.
U. triangularis, *Barnes.*	Robinson.
U. trigonus, *Lea.*	Robinson.
U. undulatus, *Barnes.*	Robinson.
U. ventricosus, *Barnes.*	Jewett (Lockport); Robinson. Said to occur in Lake Champlain.

Subgenus **MARGARITANA,** *Schum.*

M. complanata, *Barnes.*	Robinson.
M. Hildrethiana, *Lea.*	Buffalo River (W. W. Stewart).
M. margaritifera, *Lin.*	Reported orally. Localities not known.
M. marginata, *Say.*	Aldrich; Lewis; Robinson.
M. rugosa, *Barnes.*	Aldrich; Dewey; Jewett; Lewis; Robinson; Skillton.
M. undulata, *Say.*	Aldrich; Dewey; Lewis; Robinson; Skillton.

Subgenus **ANODONTA**, *Lam.*

A. Benedictii, *Lea.*	Dewey; Lea (Lake Champlain); Robinson.
A. edentula, *Say.*	Genesee River (Dewey).
? **A. Ferussaciana**,[23] *Lea.*	Genesee River (Dewey).
A. Footiana, *Lea.*	Dewey; Robinson.
A. fluviatilis, *Dill.*	Lewis; Skillton.
A. fragilis, *Lam.*	Dewey.
A. imbecillis, *Say.*	Dewey; Lewis; Robinson.
A. implicata, *Say.*	Skillton.
A. lacustris, *Lea.*	Ingalls; Lewis.
A. Lewisii, *Lea.*	Dewey; Lewis; Robinson.
A. subcylindracea, *Lea.*	Dewey; Lewis; Robinson.
A. undulata, *Say.*	Ingalls; Lewis. Dewey quotes the species, erroneously, no doubt. It may not occur so far west.

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[23] This is probably an erroneous interpretation of a sexual variety of *A. subcylindracea*. *An. Ferussaciana* probably does not occur in this State.

IX. New Noctuae

BY AUG. R. GROTE.

[*Read before this Society, August* 7, 1874.]

Hadena confederata, *Grote.*

♂.—Allied to *H. rurea*, and similarly sized. Eyes naked, tibiae unarmed. Smoothly scaled, of a peculiar light olivaceous ash color with brownish black blotches on the fore wings. Collar light brown; the prothoracic pieces show a central curved dark line, above this they are blackish. The fore wings have indistinct lines; they are shaded or blotched with blackish at base, on the subbasal space superiorly, and beyond the geminate t. a. line about the indistinct claviform spot. The stigmata are concolorous with the ashen wing, moderate, upright, entirely undefined, determined by blackish shades between them and by the blackish costal edge. Beyond the reniform, a large blackish blotch obtains, irregularly triangulate, from the costal region downwards. It extends on costal region from above the reniform to the apices; reaching downwardly to vein 2, obliquely margined on its inner edge and outwardly conforming to the subterminal line, leaving the terminal space ashen but crossing this latter medially at the place of the usual w-mark. A terminal interrupted dotted line. Fringes ashen, outwardly dotted with a darker shade. Hind wings blackish fuscous, without markings, paler at base; fringes pale. Beneath pale, much shaded with fuscous, especially on fore wings; no distinct lines or discal points.

Expanse, 35 m. m. New Orleans (Mr. V. T. Chambers). Texas.

Taeniosea, n. g.

The moth is allied to the species of Taeniocampa. The head is somewhat closely applied to the thorax as in that genus. The frontal hairs form a large loose longer tuft; the squamation is loosely wooly. The eyes are naked, with lashes; maxillae moderate. Labial palpi long, equaling the front or slightly exceeding it, third joint proportionately long and more closely scaled. Antennae simple, scaled above, pubescent beneath with lateral setae which are merely longer in the male. Thorax with the collar distinctly lobed and with a slight frontal tuft, else untufted as is the abdomen. The abdomen has the ovipositor lengthily exserted. All the tibiae unarmed. The slight species offer a combination of structural characters, exposed above, which will exclude them from any of Lederer's genera. In ornamentation there is a certain resemblance to *Taeniocampa gothica.*

Taeniosea gentilis, *Grote.*

♂ ♀.—Mouse gray with a carneous tinge on the thorax, not unlike the color of *Taeniocampa alia.* The fore wings are tinged with carneous ochre on the median space and sometimes ♀ over the whole wing. The transverse lines are geminate, black or blackish, interrupted or indistinct, the t. p. line not much exserted opposite the cell, followed by a double series of black nervular points. Subterminal line pale, preceded by interspaceal cuneiform dark shade marks. Terminal line black, interspaceal, interrupted, even. Fringes concolorous with the wing. Hind wings blackish fuscous in either sex, a little paler at the base, with the discal lunule of the under surface reflected. Fringes pale with dark interior line. Beneath ochery gray, irrorate, fore wings mostly fuscous shaded, with double lines and discal lunules.

Expanse, 26 to 27 m.m. St. Catharines, Ontario (from Geo. Norman, Esq., collected in July). I refer to this species specimens from New York and the Eastern States which have paler ochery fore wings and which in this respect appear intermediate between this and the following form.

Taeniosea perbellis, *Grote.*

♀.—Very different in color from the preceding, more distinctly marked and pale and brighter tinted. The size is perhaps a little larger, and the fore wings more produced at apices. The ground color is whitish ocher or ocher gray, shaded with blackish at base, over costal region and on subterminal space of the fore wings, leaving the terminal space and the median space before the median shade nearly free. Lines black, single or obsoletely geminate, the inner line being wanting to the scalloped and distinct t. a. line, and the outer very faint to the lunulate t. p. line. This latter is angulate above the reniform which it closely surrounds, shows a depression opposite the cell and is again slightly angulate on median vein. It appears to run nearer the reniform than in *T. gentilis.* The double veins of points beyond the t. p. line are not prominent but brought into relief by noticeable interrupting white dots. On the dark costal region of the sub-terminal space the three ante-apical pale dots are apparent. The preceding brown tinged cuneiform shades to the subterminal line are obvious, the line itself lost. The stigmata are pale, concolorous, the cell between them tinged with bright ferruginous and the distinct median shade is mostly of the same tint. The black terminal line is reduced to interspaceal points. The black terminal line is reduced to interspaceal points. The fringes are bright carneous, gay colored and contrasting. Hind wings a little paler than in *T. gentilis*, with a terminal black interrupted line perceivable and the fuscous color intruded upon by paler on the outer border before anal angle. Beneath much as in *T. gentilis.*

Expanse, 30 m. m.

Of this beautiful insect Mr. Norman has taken but a single specimen at St. Catharines. It seems to differ by the details of the ornamentation of the fore wings from the type of the genus with which it accords structurally. The fore wings are rougher looking, not so smooth and the ornamentation is very evident and distinct.

Buffalo Society of Natural Sciences 5 16-259.

X. Notes on American Lepidoptera with Descriptions of Twenty-one New Species

BY AUG. R. GROTE.

[*Read before this Society, Sept.* 4, 1874.]

SPHINGES.

Hemaris palpalis *Grote.*

♀.—Antennae black. Head above pale sulphur yellow, palpi bright orange with the tips black. Tongue black. Breast and sides of the thorax, beneath the wings, pale sulphur yellow. Thorax above, covered with olivaceous or rusty yellowish hair, extending over the dorsum of abdomen. Abdomen black with the preanal segments tufted with light sulphur yellow at the sides; anal hairs black. Legs black. Wings pellucid with narrow blackish brown terminal borders, on the primaries even, inwardly a little irregular towards internal angle.

Length of fore wings, 20 m.m. A specimen with the ticket "Gilroy," collected by the late G. R. Crotch, in British Columbia, and contained in the Museum of Comparative Zoology at Cambridge. Allied to the Eastern *H. tenuis,* and differing from all the species by the discolorous labial palpi. No perceivable reddish apical stain.

NOTE.—To my previous paper on the species of *Hemaris,* I now add the following observations which have become necessary from the study of specimens kindly sent me, by Mr. Lintner, from Albany, a brood of *H. tenuis,* raised by Mr. O. Reinecke of Buffalo, and twelve specimens of the same species from Ohio and Missouri received from Dr. Hodge. I have communicated the larva of *H. tenuis* to Mr. Lintner, whose attention to this group has been rewarded with such satisfactory results, and he informs me that the specimen differs from that of *H. diffinis,* described by himself, in the more distinct and well defined ventral stripe. The general color of the larva of *tenuis* is green, but a few brown specimens were found. The observation was not entirely completed, but it is believed that this difference in color is not sexual. On comparison of the specimens the evenness on the one hand, or interspaceal scalloping on the other, of the inner margin of the terminal band of the primaries will separate constantly *tenuis* from *diffinis,* of which I have examined both sexes. I find that the width of the band is a sexual feature, it being narrower in the males of both species, and that it is also probably a comparative feature to distinguish the species, it being narrower in *tenuis* compared with the same sex of *diffinis.* The other characters indicated by me do not always hold good and are subservient to the characters above given, and which I have primarily insisted upon in separating these species. Of these there is first the absence of the red stain on the primaries at apices. In 9 ♂ specimens of *tenuis* communicated by Mr. Lintner, the stain is sometimes as prominent as in *diffinis,* in bred specimens it is faint, and in Western specimens it appears to be occasionally absent. As to the size again, some of Mr. Lintner's specimens are hardly smaller than *diffinis,* while there is a variation among them in this respect, and some Western and bred specimens are as small as my types. Mr. Lintner suggests that the apical stain becomes brighter by the abrasion of possibly darker surface scales. Mr. Lintner writes: "The red becomes more apparent with the partial denudation of the wing, it is scarcely apparent in bred specimens and quite conspicuous in some beaten ones occasionally extending half way along the margin at the cutting of the nervules." There seems also to be a variation in the extension of the sericeous paler vestiture of the thorax over the basal black segments dorsally, perhaps sometimes due to the condition of the specimen. All the species of this group have a thin covering of scales on the pellucid fields of the wings on the escape from the pupa. Rarely specimens are captured which show traces of these scales. This statement has been previously made by us of *Haemorrhagia Buffaloensis* (Ann. N. Y. Lyc. N. H.) and more generally of the entire group by Mr. Lintner in his valuable Reports. I am indebted to Mr. Lintner for an opportunity of comparing a specimen of Mr. Strecker's *Macroglossa fumosa.* I regard it as an example of *H. tenuis* in which these frail scales are adherent. The three specimens on which Mr. Strecker based his determination were bred by Mr. O. Meske from pupae received from Racine, Wisconsin. The ♂ differs in no wise from *tenuis* except that there is a slightly increased breadth to the terminal border at the apices than in other examples of ♂ *tenuis*, a character which has been overstated by Mr. Strecker at $\frac{3}{16}$ in. Mr. Lintner measures ♂ *fumosa* at $\frac{1}{12}$ in., ♀ at $\frac{1}{10}$. It is thus barely possible that a species is to be separated from *H. tenuis* in which the marginal bands (♂ ♀) of the fore wings are slightly broader, but without other distinguishing features.

Taking into consideration, however, the misapprehension of specific character in this group displayed by Mr. Strecker in his description we should not be warranted in considering *fumosa* as distinct specifically from *tenuis*. The three Northern species, from the Atlantic District, may be separated as follows:

Terminal band of primaries even on its inner edge .... **tenuis.**
interspaceally roundedly exserted on its inner edge. **diffinis.**
interspaceally dentate on its inner edge...... **marginalis.**

My specimen of *H. marginalis* figured by me Plate 1, fig. 10 of Vol. 1 of the Bulletin, is, I find, a male, and not a female, as I seem to have erroneously considered it. A second male has been received from Ohio; no female is known to me, unless a specimen in Mr. Strecker's possession is that sex.* Of *axillaris* I have two ♀ specimens from Texas. In these the band is very broad, the dentations prominent; the anal tuft is entirely black. A male received from Nebraska (Mr. Dodge) might be considered as belonging to this species, though the anal tuft is yellow medially. The band is a little narrower than in the female but broader than in the ♂ *marginalis*. The discovery of both sexes of *marginalis* and a comparison of a series of specimens is needed to clearly show the distinctions between the two latter forms which seem to differ principally by the greatest width of the band and robustness of the body, together with the greater length of the dentations in *axillaris*, in which the color of the wings appears to be a more reddish brown.

Lepisesia Victoria *Grote.*

♀.—Antennae slender and rather long, notably swollen at the tips, with terminal spinule, blackish above, reddish beneath. Thorax above rusty or olivaceous yellowish; beneath, with the legs, whitish and olivaceous. Abdomen

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*Since the reading of this paper I have received a ♀ *marginalis* from Mr. J. W. Byrkit of Indianapolis.

blackish mixed with whitish and olivaceous hairs. Fore wings at base pale, like the thorax; median space deep olivaceous, defined at the sides and narrowing to internal margin and showing a black discal streak. Beyond, the wing is as at base, enclosing a narrow subterminal olivaceous band spreading on the costal region over the apex. Hind wings bright deep yellow, deepening in color to the anal angle, with a distinct defined black marginal band, tolerably even, the fringes tipped with white hairs.

Length of fore wing, 18 m. m.

A specimen collected by the late G. R. Crotch in British Columbia, and contained in the collection of the Museum of Comparative Zoology, Cambridge.

Philampelus (Dupo) mirificatus *Grote.*

♂.—Intense olive green. Tegulae with clear white edging. Abdominal segments neatly edged with white and with a dorsal white shade line. Fore wings concolorous olive green, with the veins more or less completely marked with white. An inner distinct oblique transverse band composed of two distinct white lines; a discal white mark containing the usual dot on the cross-vein. An exterior rounded white transverse band composed of two white lines, the inner a little diffuse. A white shade runs inwardly from the apex to cell 6 where it joins the outer component line of the external transverse band; it appears issuing from the band again on cell 3 and runs thence outwardly to internal angle. An incomplete terminal white shading along the external margin and the fringes are partly whitish. Hind wings olivaceous with white fringes. There is a blackish discal shade spot. A treble subterminal series of blackish interspaceal shade marks converging superiorly and widening inferiorly; the inner series terminating in a large spot before the rose colored patch along internal margin; the outer two series becoming obsolete inferiorly, replaced by two whitish shade lines, which faintly separate the series of black marks. This subterminal series of black marks is well removed from the external margin leaving an intense olive green terminal space which narrows to anal angle and is very much broader than usual superiorly. Beneath dull red with a common exterior transverse darker line slightly accentuated on the veins. On the fore wings an oblique line from the apices joins this darker line and again appears faintly inferiorly, repeating the course of the white marks of the upper surface at this place. Abdomen beneath and thoracic squamation roseate. Fore tibiae and tarsi white outwardly. Orbits of the eyes white.

Length of primary, 50 m. m. *Habitat,* Cuba (Chas. Wright), in Museum of Comparative Zoology.

Allied to *P. posticatus, P. Linnei* and *P. strenuus,* from all differing by the white linear bands on the fore wings and their apical white line, and by the distinctly white banded abdomen and tegulae.

While nearest to *P. posticatus* (Proc. Ent. Soc. Phil., Vol. 5, Pl. 3, fig. 4) in the appearance of the hind wings, it is most dissimilar in the markings of the primaries which are more like those of *P. Linnei* (Proc. Ent. Soc. Phil., Vol. 5, Pl. 3, fig. 3) in the evenness of the ground color.

In my last list of the Sphingidae of Cuba (Trans. Am. Ent. Soc., Vol. 3, p. 183, Oct., 1870), I enumerated fifty-two species from the Island. To this number we must add the present species apparently unknown to Prof. Poey and Dr. Gundlach.

I notice also in Dr. Packard's "Record" for 1871, the description of "*Choerocampa curvatus*" by L. W. Schaufuss from Cuba. I have not been able to see Mr. Schaufuss' publication. If no synonym has been made the number of species of Sphingidae described from Cuba must be now fifty-four.

Ceratomia Hageni *Grote.*

♂ ♀.—Gray and olivaceous, the latter of a variably intense hue, sometimes nearly blackish, and obtaining principally at base terminally and exteriorly between the double dentate black transverse lines which cross the wing somewhat as in *Daremma undulosa.* On the whitish discal blotch is a small ringed white spot and a smaller dot is placed above this and obliquely outwardly at the origin of vein 6. A white apical shade limited inferiorly by an oblique black zigzag streak. As in *C. amyntor* there are black dashes on the interspaces running obliquely inwardly, but these are less prominent and diffuse than in Hübner's species. Fringes olivaceous, narrowly interrupted centrally with white. Hind wings blackish with double faint transverse shade lines and with the external margin olivaceous. A fine terminal dark line, fringes as on the fore wings. Beneath fuscous gray, with double transverse exterior common dentate line, and, on primaries, the apical streak repeated. Tegulae olivaceous; disc gray. Abdomen dorsally olivaceous, laterally gray, with a dorsal black line; two lateral stripes and a stigmatal line on each side. Head above and collar olivaceous, the latter with two black lines and the tegulae are lined. Sides of the thorax and collar whitish. Antennae white outwardly.

Expanse, 102 m. m. *Habitat,* Texas (Boll, No. 14), in Museum Comparative Zoology.

I am honored in dedicating this very distinct species to Dr. Hermann A. Hagen of the Museum of Comparative Zoology, Cambridge, Mass.

NOTE.—In my last catalogue of the North American Sphingidae I enumerated sixty-nine species as found within our territory. As I then remarked, it is almost certain that the *Ellema Harrisii* of Dr.

Clemens is synonymous with *Lapara bombycoides* of the British Museum Lists, diminishing the number of species by one, and leaving us sixty-eight. To this number must be added three species from the West Coast subsequently described by Mr. Hy. Edwards in the Proceedings of the California Academy of Science, Vol. 5, pp. 109–111. This would make the number seventy-one. I find in the collection of the Museum of Comparative Zoology, specimens of *Pachylia ficus* and *Amphonyx Antaeus,* collected by Prof. Alex. Agassiz at Key West, Florida, and which were not formerly noticed from our territory. These added give us seventy-three species, including Pachylia lyncea *Clem.* now rendered somewhat doubtful by the occurrence of *P. ficus* in Florida. I exclude from our list of species with certainty the *Smerinthus pallens* of Mr. Strecker as a synonym of Abbot and Smith's *juglandis,* while the *Sphinx eremitoides** of the same author is most probably a redescription of the *Sphinx lugens* of Mr. Walker. With the three new species above described we shall then have seventy-six species in all, recorded from America north of Mexico and the West India Islands.

BOMBYCES.

NOTE.—Writing in April, 1863, I referred the genus Crocota to the *Arctiidae,* where I believe it must remain, since it is excluded from the Lithosians by the presence of simple eyes. Afterwards Dr. Packard refers the genus to the latter group and this course is followed by Mr. Robinson and myself in our "List" of 1868. I am indebted to Mr. Wm. Saunders for an opportunity of examining his type of *Arctia bimaculata,* Can. Ent. 2, pp. 4–6, 1869, where also the larva is described. It is a female specimen of Crocota quinaria *Grote,* with one of the usual pale spots on the inferior portion of the fore wings much developed. Traces of the others, obsoletely pupillated, are, however, observable. This is a stouter species than *C. brevicornis.* We seem to have two variable species of which the synonymy is difficult. A variety of the *C. brevicornis* of Walker may be figured by Hübner as C. *rubicundaria;* an immaculate form answering to Walker's var. γ. The other wider winged form appears to be Hübner's *aurantiaca* and with this *ferruginosa* of Walker may be synonymous. I have already described the variations of *C. opella* (Proc. Ent. Soc. Phil. Vol. 6, pp. 313–314), which is much the stoutest species and think that this and *C. quinaria* are now readily distinguishable. *C. opella* has been recently taken in Chautauqua Co., N. Y., and must be added to our lists of New York Bombycidae.

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* The date "May, 1874," to this publication of Mr. Strecker's must be a fictitious one, since I am credibly informed that some of the material described therein was not supplied to him until June of this year. The copies to which I have had access were not received until August.

The following is a preliminary List of our Lithosians:

BOMBYCES *Linn.;* Borkh., 1790; Hübn. (Tentamen).

{Bombycites and Noctuo-Bombycites *Latr.*, 1810.}
{Phalaenae *Hübner*, 1816.}

LITHOSIAE *Hübner* (1816).

[Lithosiidae *Stephens*, 1829.]

HYPOPREPIA *Hübner* (1825).

Type: Hypoprepia fucosa *Hübn.*

fucosa *Hübn.* Zutr., 3 Hund., S. 21, No. 236, fig. 471, 472; *Atolmis tricolor* Fitch, 3d Rep. p. 168, No. 213.

VAR. MINIATA (*Kirby*), Faun. Am. Bor., 4, p. 305, No. 193 (*Lithosia*); G. & R. List Lep. N. Am., 1, p. 7 (*Hypoprepia*); *Gnophria vittata* Harris, Rep. His. Inj. Veg., 3d Ed., p. 342. (Canada to Southern States.)

CISTHENE *Walker* (1854).

Type: Cisthene subjecta *Walk.*

subjecta *Walk.*, C. B. M. Lep., 1, p. 634; *Hypoprepia Packardii* Grote, Proc. Ent. Soc. Phil. 2, p. 31, Pl. 2, fig. 5.

VAR. UNIFASCIA *G. & R.*, Tr. Am. Ent. Soc., 2, p. 187, Pl. 2, fig. 63. (Eastern States to Texas.)

BYSSOPHAGA *Behr* (1872).

Type: Lithosia nexa *Boisd.*

nexa (*Boisd.*), Ann. Soc. Ent. Belg., 12, p. 74; *Cisthene grisea* Pack., App. 4th Ann. Rep. Peab. Acad. Sci. p. 84; Stretch, Zyg. Bomb. N. A., 1, p. 49, (*Cisthene*) Pl. 2, fig. 11. (California.)

faustinula (*Boisd.*), Ann. Soc. Ent. Belg., 12, p. 73 (*Lithosia*); Stretch, Zyg. Bomb. N. A., 1, p. 48 (*Cisthene*) Pl. 2, fig. 10.

VAR. FUSCA (*Stretch*), Zyg. Bomb. N. A., 1, p. 49. (California.)

EUSTIXIS *Hübner* (1825).

Type: Eustixis pupula *Hübn.*

pupula *Hübn.*, Zutr., 3 Hund., S. 24, No. 245, fig. 489, 490; *Eust. laeta* Geyer, Einl. 4 Hund.; *Mieza igninix* Walk., C. B. M., 1, 527; *Eustixis pupula* G. & R. List Lep. N. Am. p. 7; *Enaemia crassivenella* Zell. Verh. z.-b. Gesell., S. 563, Tab. 3, fig. 27. (Southern States.)

subfervens (*Walk.*), C. B. M. 1, 528 (*Mieza*); *Eustixis subfervens* G. & R., List Lep. N. Am. p. 7; Stretch, Zyg. Bomb. p. 168, Pl. 7, fig. 17; *Enaemia psammitis* Zell. Verh. z.-b. Gesell., S. 562, Tab. 3, fig. 26. (Southern States.)

*LITHOSIA *Fabr.* (1798).

Type: Noctua complana *Linn.*

bicolor *Grote*, Proc. Ent. Soc., Phil., 3, p. 74; *Lithosia argillacea* Pack., Proc. Ent. Soc. Phil. 3, p. 98; Stretch, Zyg. Bomb. N. A., p. 170, Pl. 7, fig. 13, (Athabasca River; Eastern States.)

cephalica *G. & R.*, Trans. Am. Ent. Soc., 3, p. 176; Stretch, Zyg. Bomb. N. A., 1, p. 171, Pl. 7, fig. 14. (Texas.)

casta *Sanborn*, Pack. Guide, p. 385, fig. 24; Stretch Zyg. Bomb. N. A., 1, p. 171, Pl. 7, fig. 15. (New Hampshire, New York.)

candida *Hy. Edw.*, Proc. Acad. Sci. Cal., Vol. 5, p. 185. (Vancouver's Island.)

CRAMBIDIA *Packard* (1864).

Type: Crambidia pallida *Pack.*

pallida *Pack.*, Proc. Ent. Soc. Phil., 1864, p. 99; Stretch, Zyg. Bomb. p. 165, Pl. 7, fig. 16. (Eastern and Middle States.)

CLEMENSIA *Packard* (1864).

Type: Clemensia albata *Pack.*

albata *Pack.*, Proc. Ent. Soc. Phil., 1864, p. 117; Stretch, Zyg. Bomb., p. 51, Pl. 2, fig. 13. (New York, Eastern States.)

umbrata *Pack.*, Ann. Rep. Peab. Acad. Sci., 1872, p. 85; Stretch, Zyg. Bomb., p. 167, Pl. 7, fig. 18. (California.)

irrorata *Hy. Edw.*, Proc. Acad. Sci. Cal. Vol. 5, p. 185. (Vancouver's Island.)

ROESELIA *Hübner* (1816).

Type: Tinea cucullatella *Linn.*

nigrofasciata (*Zell.*), Verh. z.-b. Gesell., S. 454 (*Nola*), Tab. 2, fig. 1. (Mass.)

minuscula (*Zell.*), Verh. z.-b. Gesell., S. 455 (*Nola*). (Texas.)

melanopa (*Zell.*), Verh. z.-b. Gesell., S. 458 (*Nola*), Tab. 2, fig. 2. (Texas.)

EUPHANESSA *Packard* (1864).

Type: Nudaria mendica *Walk.*

mendica (*Walk.*), Cat. Lep. B. M. 2, p. 576; *Eudule biseriata* H.-S., Exot. S. 19, fig. 441; *Euphanessa mendica* Pack., Proc. Ent. Soc. Phil., 1864, p. 102; Rob., Ann., N. Y. Lyc., Vol. 9, Pl. 1, fig. 1; Stretch, Zyg. Bomb., p. 53, Pl. 2, fig. 9. (Canada to Middle States.)

Dryocampa rubicunda (*Fabr.*) var. **alba** *Grote.*

I have received this singular variety from Professor Townend Glover of the Agricultural Department. Both sexes are entirely of a creamy white, the wings and body having lost all yellow and rosy tintings. The feet remain pink and the costae beneath at base are sometimes faintly suffused. The specimens received were from Kansas, and a study of the geographical limits of this distinct form would prove interesting. Prof. Glover has figured this form on his unpublished plates of Lepidoptera.

NOCTUAE.

Acronycta subochrea *Grote.*

♀.—A species allied to *A. Verrillii* and *A. brumosa*, larger and recognisable by the dark fuscous hind wings strongly tinged with subocherous from the base outwardly. Fore wings dark blue gray, much shaded with blackish Reniform and orbicular large, incompletely ringed with deep black. The transverse lines are much as in *Verrillii*; beyond the t. p. line the black shading suffuses the wing above internal angle; the narrow black terminal space appearing as wedge shaped marks between the teeth of the pale s. t. line superiorly. The median space shows a black streak before the distinct median shade on cell 2. The fringes are subdentate, pale tipped, with an interior dark hair line. On the hind wings they are whitish with an interior line. Beneath dusty ochery tinted, the primaries largely fuscous with the costa pale, dotted with blackish and traces of three outer transverse blackish shade lines. Hind wings with a deeply scalloped median line, a discal lunule and terminal fuscous shading. Head and thorax like fore wings; palpi rather long and slender whitish at base, second joint black, terminal joint gray.

Expanse, 37 m. m. St. Catherines (Geo. Norman, Esq.); New York (Coll. B. S. N. S.).

Acronycta quadrata *Grote.*

♀.—A large species, allied to the typical forms of the genus, with distinct ornamentation. Fore wings whitish gray with a distinct deep black longitudinal basal streak extending to the geminate, nearly even, suboblique t. a. line. Median shade noticeable from its position being nearer to the t. a. line on internal margin than to the t. p. line. Ordinary spots vaguely outlined, apparently large, with a distinct block of black scales between them on the cell. The median space is wide. The t. p. line is nearly erect and even, slightly outwardly exserted superiorly. A distinct black dash above internal angle from the t. p. line, crossing the subterminal. Subterminal space darker than the rest of the wing. A short black dash on the s. t. line opposite the cell. An even blackish terminal line. Hind wings pale, with fuscous terminal shading, without discal marks and on both wings beneath the usual markings are faint. Head and thorax pale gray; tegulae at the sides lined with blackish and the sides of the thorax in front of the wings streaked with black.

Expanse, 40 m. m. *Habitat,* Kansas (Sept., from Prof. C. V. Riley).

NOTE.—On page eighty of the first Volume of the Bulletin I have shown that Guenée describes the *Apatela americana* of Harris as Acronycta hastulifera (*Abb. & Sm.*). On the other hand Harris identifies his species as the *aceris* of Abbot and Smith from the similarity of the larvae. Prof. Riley has called my attention to his description of the larva of Harris' *americana,* which accords with Harris and also with Abbot's figure of the larva of the species he calls *aceris.* I find that Guenée has transposed, in his descriptions, Abbot's larvae, perhaps unintentionally, but perhaps also correctly, and since the figure of the imago of *hastulifera* strongly resembles *americana,* while the figure of the larva of *aceris* fairly represents the larva of *americana,* these may be correctly associated under the name *hastulifera.* It must be, however, doubtful, and I think we might even prefer Harris' name with the following synonymy so far as Guenée and Abbot and Smith are concerned.

Acronycta americana (*Harris*).

Phalaena aceris Abb. & Sm., Pl. 93, *larva.*
Acronycta hastulifera Guen., Noct. 1, p. 47 (*imago* and *larva*).
? Phalaena hastulifera Abb. & Sm. Pl. 92 (*imago*).

Acronycta acericola. ——

Phalaena aceris Abb. & Sm., Pl. 93 (*imago*).
Acronycta acericola Guen., Noct. 1, p. 48 (*imago*).
Phalaena hastulifera Abb. & Sm. Pl. 92, *larva* teste *Guenée.*

Dr. Morris' reference, to which Prof. Riley objects, has its origin in the fact that both Harris and Guenée identify Abbot's *aceris* under different names. *Acericola* (aceris *imago*), is unidentified by actual specimens.

Agrotis gravis *Grote.*

♂ ♀.—All the tibiae spinose. Nearest to *A. volubilis* and the European *A. valligera*, a little smaller than either of these. Male antennae bristled, with the joints laterally acuminate. Fore wings dull gray brown with darker costal region; the female is more purely brown. A dark basal dash extended beyond the t. a. line as the dark margined prominent acuminate claviform, less elongated than in *volubilis*, and very much less prominent than in *valligera*. Orbicular small, dark, light ringed, in the male with an edging of whitish scales which also partially edge the dark upright moderate reniform. T. p. line faint and narrow, regularly scalloped interspaceally. Subterminally, in the male, opposite the cell are a series of interspaceal cuneiform marks followed by whitish points, somewhat as in *valligera;* these are not noticeable in the female, in which the s. t. line is indicated by a dark shade followed by the paler tinting of the subterminal space. Hind wings dark fuscous, a very little paler in the male and reflecting from the under surface the discal lunule. Beneath fuscous, with indistinct transverse line. Tegulae more or less hoary and contrasting; collar with a distinct black median line, margined above with whitish, more distinctly in the male. The contrast in general tone of the sexes is obvious, the male being more blackish gray, with a faint olivaceous tinting, the female brown. In *A. volubilis* the ♀ is the darker and here the reverse seems to be the case. The median shade is well marked in one female specimen and the color of the cell between the spots is here obviously deepened. The fringes on the ♀ hind wings are testaceous with an interior line. In the single male specimen I have they are defective. Four ♀ one ♂ specimen from Mendocino, and numbered 83/84 and 131/132 by Mr. Behrens.

Expanse, 34 m. m.

A single male specimen differs by the almost wholly blackish primaries, the brown black, not hoary thorax, else the markings are those of the species and are well brought out on the primaries.

NOTE.—By a typographical error the reference to Agrotis fennica, on page 10 of my list, has been dropped to the following line. The two species should be cited as follows:

***fennica** *Tausch.*, H.-S., 348, figs. 146, 147; Guen. Noct. 1, p. 270 (California, *Behrens* No. 13).

***lycarum** *Ev.*, H.-S., 333, figs. 123, 124 (California, *Edwards*, No. 1392 and *Behrens* No. 31).

This latter determination is doubtful as yet; the Californian species strongly resembles A. Cochrani from the Eastern slope but seems stouter and looks like Herrich-Schaeffer's figures above cited.

Mamestra distincta.

Hadena distincta (Hübn.) Grote, List. N. Am. Noct. p. 15.

At the time I prepared the List I had no specimens of this species for examination. I owe a specimen to the kindness of Dr. Hagen, taken in Texas, and which enables me to correct my former generic reference.

Mamestra vicina *Grote.*

A species of medium size; with hairy eyes and unarmed tibiae, apparently related to *M. claviplena.* The costa is a little depressed and the apices produced. The color is blackish gray, not blackish brown as in its ally. The narrow, basal, longitudinal black streak is evident. Basal half line widely geminate. The median lines are approximate inferiorly below the median vein, narrowing the median space and, on the submedian interspace, the large black outlined and shaded claviform spot attains the t. p. line. The ordinary spots are relatively large, pale, whitish, very faintly warm tinted, the orbicular rounded ovate, proportionally large, the reniform inwardly distinctly black margined, but slightly outwardly constricted and here more vaguely defined. The t. p. line is scalloped interspaceally, apparently geminate with included whitish gray shade, but the outer component line is lost. The subterminal line is narrow, whitish gray, not very distinct, irregular, forming no W mark, preceded and succeeded above internal angle by a distinct black dash on the submedian interspace. An even continued blackish terminal shade; the veins terminally marked with blackish ; the fringes narrowly pale opposite the extremity of the veins. Hind wings pale fuscous with soiled veins; fringes whitish with an internal line. Body parts concolorous; abdomen tufted on the dorsum, especially centrally; ovipositor not exserted.

Expanse, 18 m. m. St. Catherines (Geo. Norman, Esq.), Massachusetts (Mr. H. K. Morrison).

Hadena castanea *Grote.*

♂ ♀.—Allied to the European *Hadena rubrirena*, compared with a specimen of which and Herrich-Schaeffer's fig. 57, our Californian species seems a wider winged and heavier insect, less brightly marked and with a dark streak along the submedian fold on the median space wanting in the European species. Fore wings dark brown; blackish along the terminal space. The ordinary lines are black, obsoletely geminate, much as in the European form. Ordinary spots large, concolorous, the claviform outlined, the reniform very large and with a more or less decided yellow stain resolved into Gortyna-like spots outwardly. A black shade along the submedian fold on the median space. Subterminal line pale, of the usual irregular shape, preceded opposite the cell by cuneiform brown marks; fringes concolorous. Hind wings fuscous in both sexes with paler fringes and paler at the base with an indistinct median line. Thorax and abdomen strongly tufted; the former concolorous with primaries, the tegulae blackish. Underneath paler, the hind wings with a distinct discal mark.

Expanse, 46 to 55 m. m. California (Mr. Behrens, three specimens with the numbers 10 and 20 on red labels).

Hadena albina *Grote.*

♀.—Two specimens of a species closely allied to *H. castanea*, similarly sized and differing as follows: The ground color of the wing is paler, somewhat ocherous and this tint obtains especially on the subterminal space. The orbicular is larger and open to costa; the reniform is washed with pure white centrally and the claviform is larger. The terminal space is marked with the paler tint on each side of the veins, interrupting vividly the fringes. The disc of the thorax and the tufts are also quite pale; the hind wings are paler and more yellowish with the median line more distinct. Beneath paler, with a more reddish tint and with the discal spot less evident than in *H. castanea.* The tufts on the abdomen are equally prominent with those of *H. castanea*, and the color has the reddish staining of its ally.

Expanse, 46 m. m. *Habitat*, California (Mr. Behrens, No. 78, Sauzalito, May 15).

Hadena curvata *Grote.*

♂ ♀.—Two thirds the size of the preceding species, but allied by the strongly tufted thorax and abdomen. The usual depression of the external margin of the hind wings opposite the cell is here exaggerated, and forms a strong specific character to judge by its perfect uniformity in the four specimens before me. Blackish wood brown, very dark. Basal and t. a. lines distinct, black, geminate with included pale shade; t. a. line a little jagged superiorly, arcuate in its general course. Extra basal space shaded with deep black. Orbicular concolorous, black ringed, moderate. Reniform usually concolorous, sometimes shaded with ochery brown which always stains the approximate t. p. line opposite the spot, and this stain may be mistaken for the reniform itself. Subterminal line with the usual indentations, well removed from the margin, pale. Veins marked with deep black terminally and more or less distinctly. A terminal pale line before an even dark one at the base of the dark obsoletely pale dotted fringes. Hind wings blackish fuscous, silky, paler at base with pale, somewhat ruddy interlined fringes and a faint transverse line. Beneath pale with a purply or ruddy hue, coarsely irrorate with black and with a common line and black discal spots. Beneath body and legs like the wings; a stigmatal black abdominal line. Above head and thorax like primaries, touched with brown and with obsolete black lines on the tegulae and collar.

Expanse, 30 to 35 m. m. Mendocino, California, Mr. Behrens. Specimens are numbered 70, 99, 105.

Amolita n. g.

♀.—An exceedingly frail and weak form, with squarer primaries than *Se*
and with the body squamation entirely mealy and scaley. Ocelli. Head sn
and narrow. Eyes naked, without lashes. Maxillae weak. Legs unarn
Antennae (♀) simple, scaled above, with two fine bristles on each joint.
bial palpi with very short terminal joint, hence shorter than in *Senta*.
clypeal protuberance. Fore wings broad, tortriciform in shape, with strai
oblique external margin and defined internal angle, 12 veins, 9 out of 8, a sh
furcation; an accessory cell from the outer end of which 7, 8 and 10. Al
men not flattened; ovipositor not visible.

Amolita fessa *Grote.*

♀.—Fore wings very pale straw color with concolorous fringes, the ve
not marked and without other ornamentation than two diffuse dull redd
shades, the first of which runs from the base of the wing over the med
nervure and ascends beyond the cell to apices; the second runs obliquely fr
about the middle of internal margin to below the apices on external mar
its origin not well defined. A reddish dot in the place of the reniform. H
wings whitish without markings; beneath whitish, immaculate. Body p
pale, concolorous.

Expanse, 30 m. m.; *breadth of primary*, 6 m. m.

A specimen from New York with the number 526, received fr
Mr. E. L. Graef. The genus may be entered on the "List," betw
Doryodes and *Senta*, on page 20.

Heliophila adjuta *Grote.*

♂.—Closely allied to *H. phragmitidicola;* the fore wings are purely obsc
straw color, like those of *H. pallens*, without rosy tints. No traces of the li
a black dot on the cell in the place of the reniform. A darker shading be
the median vein, vaguely ascending beyond to external margin below
apices. T. p. line indicated by an obsolete series of black dots of which
two or three, wide apart, are perceptible. Collar distinctly double lined. H
wings pale straw color with soiled veins and a tolerably broad fuscous te
nal band, entirely wanting in this sex of *H. phragmitidicola*. Beneath, on
costa, is a distinct black dot and a succession of marks on the veins shows
transverse line. In the strongest marked specimens of its ally the line is
indicated by a faint shaded dot on costa and usually this is entirely want
A series of terminal black points on both wings beneath. Collar with do
lines; body more yellowish than in its ally with a fuscous shading on the
domen dorsally.

Expanse, 35 m. m. *Habitat*, Alabama (*Grote*).

This form can be separated from *H. phragmitidicola*, by the ch
acter of the hind wings and by the general richer more yellow
oring. The type is in the collection of this Society.

Heliophila adonea *Grote.*

♂.—Intermediate in general characters between *H. phragmitidicola* and *H. commoides*, the hind wings rather resembling the former, the front pair the latter species. The fore wings are shaded longitudinally with reddish, the costal region to the black dotted t. p. line and beyond on the veins being differentiated by its grayish color. Median nervure accompanied by a deeper reddish shade and marked with whitish. A white dot at the extremity of the nervure. The usual black dot at the place of the reniform is not perceptible in any of my four fresh specimens. Veins accented by paler scales. A darker irregular shading over the terminal space. A very narrow medial black longitudinal basal streak, and a very slight one on internal margin near the base. Fringes dark reddish, obsoletely cut with pale hairs at the extremity of the veins. Hind wings whitish with soiled veins and shaded fuscous borders and the fringes lightly stained with reddish. Beneath reddish, irrorate; on the fore wings the transverse line indicated on costa; hind wings pale except along costal region. Collar with double lines. Body parts reddish gray, abdomen paler.

Expanse, 34 m. m. Ithaca, N. Y., coll. Smith.

This species wants the determinate black streaks on the primaries of *H. commoides*, is a slighter and more ruddy species and may be distinguished from *H. phragmitidicola* by the characters of the darker male secondaries.

Aniela n. g.

Form of *Laphygma frugiperda* and with the compressed vestiture of *Caradrina*. So also with a resemblance to *Prodenia*, but separable from each by the fact that all the tibiae are spinose. This character brings the moth near to *Agrotis*, but the smooth and flattened, untufted thoracic squamae offer a distinguishing feature. The femora and tibiae show some looser fringing of hair. Eyes naked. Labial palpi stout with short obtuse terminal article. Male antennae simple, merely pubescent beneath. Front rather broad and the head is prominent and thickly scaled. The hind wings are translucent and from the total habitual appearance we should refer the moth to *Laphygma* or *Prodenia* at first sight, from which the above characters and the untufted thorax and abdomen will separate it. (There is a short thick discolorous fringing of scales to the eyes which seems to me to differ from the ordinary character of "fringes.")

This genus leads me to believe, that Lederer's "*Noctuiden*" might more naturally follow his "*Caradrinen*" in a grouping of the genera. In my "List" the genus may provisionally precede *Laphygma* on page 22.

Aniela Alabamae *Grote.*

♂ ♀.—Stouter than *L. frugiperda* and quite distinct in coloration from any of the varieties of that species described by Prof. Riley in the Missouri Reports.

Fore wings and thorax of a livid gray mottled with darker scales except the terminal space from below the apices which is blackish; a vinous shade precedes the sinuous subterminal line, which latter is relieved and distinct; fringes vinous. The ordinary lines are obsolete except the t. p. line which is formed of minute black dots obsoletely connected by a scalloped hair line. Reniform more or less filled with blackish scales; orbicular indistinct; t. a. line obsolete; costal edge darker shaded. Hind wings opalescent with very narrow fuscous borders, smoky costal region and soiled veins. Beneath the fore wings are shaded fuscous with vinous fringes; hind wings as on upper surface. The palpi have the basal joints vinous brown and the legs and under thoracic vestiture are vinous gray. The collar is discolorous, deep brown. Eyes naked; squamation close; all the tibiae weakly spinose; male antennae simple, very shortly setose.

Expanse, 36 m. m. *Habitat,* Central Alabama (Grote). Collection of this Society.

Lithophane oriunda *Grote.*

Allied to *L. Bethunei* and belonging to the typical group of the genus. Distinct, intense, even, somewhat purply brown. Fore wings concolorous with the costal edge shaded with whitish to the t. p. line, and interrupted by oblique brown streaks indicating the transverse lines. Reniform and orbicular spots more or less shaded with whitish, shaped as in *L. Bethunei.* Claviform distinctly outlined in black, large. Subterminal line alone distinctly indicated by pale points. The median dentate lines more or less lost in the ground color. Veins terminally indistinctly black marked opposite pale dots on the brown dentate fringes. Secondaries dark fuscous, with a warmer shade on the fringes. Beneath paler, shaded with reddish, with a distinct discal spot on the paler hind wings and a common line. On the primaries the pale costal dots are evident on both surfaces.

Expanse, 34 m. m. Canada, Mr. Wm. Saunders, No. 960.

Color like *L. ferrealis,* but darker, with the subterminal line more even, the orbicular smaller and the costal discoloration paler and more distinctly contrasted and limited.

Orthosia infumata *Grote.*

This is a rather wide winged species with naked eyes, distinctly lashed. The untufted abdomen is somewhat compressed but not flattened as in *Glaea,* the wings proportionally wider terminally. The tibiae are unarmed. Dull pale ochery, much shaded with fuscous on the primaries beyond the median shade. Transverse lines narrow, even, dark; the t. a. line obliquely arcuate being produced on cell 2. Median shade rather diffuse and broad. Ordinary spots rather large and vague, stained with bright ocherous, the reniform including an inferior black mark. T. p. line arcuate, distinct. Subterminal line faint with a preceding darker shade deepening on costa. Hind wings very pale ochery, more or less brightly tinted, with double faint transverse fuscous shade lines. Fringes concolorous, even. Terminal lines obsolete. Beneath pale yellowish ochery with double lines and faint discal marks. Abdomen very pale; thorax like primaries.

Expanse, 40 m. m. *Habitat*, Chautauqua Co., N. Y.

Specimens received from Mr. Geo. Norman vary from ocher yellow to smoky testaceous in color.

Pseudorthosia n. g.

The habitus and shape of the wings are like *Orthosia*. Eyes naked, with lashes. Front broad; clypeus protuberant, rugose. All the tibiae armed, the fore pair with a double row terminating in longer spinules. Male antennae bristled, brush-like. Thorax and abdomen without tufts, the former proportionally heavy and square.

The broad rugose front must be used to separate the genus from *Agrotis;* its natural position seems with *Orthosia* and allied genera. The color is almost that of *Calymnia.*

Pseudorthosia variabilis *Grote.*

♂ ♀.—A rather large pale yellowish or fawn colored species with variably distinct ornamentation, thorax and fore wings light yellowish buff, quite pale, sometimes lightly soiled with fuscous. Primaries with the ordinary lines even, the t. a. line somewhat angulated, divergent. The discal dots are usually distinct and black; the orbicular an oblique streak, the reniform narrow, upright. Median shade, variably distinct. As in *Orthosia purpurea,* the subterminal line is usually preceded on costa by a dark shade. Terminal interspaceal dark dots; fringes concolorous. Hind wings almost whitish, very pale, tinted like fore wings, with more or less distinct subterminal transverse shade. Beneath with dots and a common line more or less distinctly marked on the costae.

Expanse, 38 m. m. Five specimens. "Sept., Oct.," Mr. Jas. Behrens, Sauzalito.

Plusia fratella *Grote.*

♂ ♀.—Closely allied to *Plusia gamma,* from Europe and America, but hardly more than half as large and differing in the details of the ornamentation. The color of the fore wings is the same. The metallic mark is very narrow and whitish, and its outer extremity is disconnected as a small silvery dot. The t. p. line is distinctly geminate, more even and without the interruption on vein 2 and the dentations above vein 1 of *P. gamma.* The subterminal line and the submetallic preceding shade is very similar in the two species. Hind wings and under surface very similar to those of its ally, from which it may be easily separated by the characters above given.

Expanse, 30 m. m. *Habitat*, Texas (O. Meske).

Acerra n. g.

♂.—Related to *Plusia*, the squamation entirely hairy. The colors are those of *Lygranthoecia* and *Plagiomimicus*. Eyes hairy. Front full, with the vestiture converging from the sides but without depression as in *Plagiomimicus*, *Stibadium* or *Stiria*. Antennae with stout though not lengthy pectinations. Between the antennae the vestiture is somewhat pointedly massed. Tibiae apparently unarmed. Palpi short with the 3d joint concealed. The tibiae and femora are fringed with loose hair. The thorax and abdomen are proportionate, untufted.

Acerra normalis *Grote.*

♂.—Color of *Lygranthoecia Thoreaui*. Pearly gray. The ordinary ornamentation of the fore wings is replaced by an irregularly quadrate white line, open to the costa and complete on the other three sides, commencing at about the position of the t. a. line, extending along the middle of the wing below the median vein and running outwardly and more straightly upwardly to vein 8 at the end of the discal cell, and diffusely outwardly shaded on all three sides with deep black. Faint traces of an even transverse line over the nervules beyond this mark, apparently occupying the position of the t. p. line. On the subcostal vein, within the discal mark, there is a central black dot, V-shaped, edged with pale scales. A terminal series of black dots. Hind wings concolorous, pale fuscous. Beneath grayish, irrorate with dark scales with black discal marks and a common even transverse line. Body parts concolorous with wings.

Expanse, 35 m. m. California, Mr. Behrens, No. 61/62. The genus may follow *Plagiomimicus* on page 32 of my List of the Noctuidae of North America.

Tarache terminimaculata *Grote*, Bul. B. S. N. S. Vol. 1, p. 153.

♀.—I regard the following as the female of *T. terminimaculata*, with hesitation. The specimens agree with my male type in almost every particular except that in my two ♀ specimens the white even curved line which, in *terminimaculata* ♂ runs from the anteapical oblique white costal streak to the internal margin and regularly encloses the brown shading of the wing, here only goes to the median vein and forms a sharper C-shaped curve. An analogous sexual difference is apparently not yet recorded in this group. In the female specimens the oblique t. a. line is also distinct and followed by a black shade. The two forms agree in all else, while the outer white dentate curved streak before the internal angle is more vivid in the female and preceded by a similar orange shade, intersecting the dark field between the two white curved streaks. The general color is the same and the disposition of the terminal black dots and the black rivulous portion of the t. p. line opposite the cell correspond in the two forms. The hind wings are darker in the ♀ specimens, but this is not an unusual sexual character; the median space on the primaries is also darker shaded in these specimens. I am indebted to Mr. J. A. Lintner and Prof. Packard for ♀ specimens taken in New York and Massachusetts and for which, should my present determination be wrong, I propose the name *pulchella*.

Toxocampa Victoria *Grote.*

♂ ♀.—Fore wings pale lilac gray, subirrorate, the lines except the subterminal very indistinct. Orbicular a minute pure white dot. Reniform upright, moderate, brown black or sometimes ocherous, resolved externally into detached dots. Subterminal space darker shaded than the rest of the wing widening to costa. Subterminal line vague, white or pale, waved. A series of interspaceal black terminal dots; fringes pale with an interior shade line. Hind wings pale dusty fuscous with terminal shading; beneath with very faint transverse shades; on the primaries a discal shading. Collar and vertex deep blackish brown, velvety, discolorous with the gray thorax. A white line projecting in front runs between the white antennal sockets and separates the paler brown clypeal vestiture from the dark vertex; palpi grayish brown.

Expanse, 48 m. m. *Habitat,* Victoria (G. R. Crotch, in Mus. Comp. Zoology).

Resembles the European *T. astragali* H.-S., fig. 269, but differs by the white orbicular and the evident subterminal line, as well as the shape of the reniform. The genus is not previously registered as American. It may be cited after Catocala, on page 43 of my List of the Noctuidae of North America.

NOTE.—Mr. Lintner kindly draws my attention to the fact that I have omitted the following species regarded as common to Europe and America from the "List." It should be cited under *Eurois,* on page 12. The *Polyphaenis herbacea* of M. Guenée, unknown to me, and cited under *Eurois* in the List, should be retained under its original genus. *E. herbida* has the middle and hind tibiae spinose. I do not verify the differences mentioned by M. Guenée; in the female the white cloud beyond the reniform seems more conspicuous in American specimens. I think they are the same.

*herbida (*W. V.*); Guen., Noct. 2, p. 75.

XI. Determination of the Species of Moths Figured in the "Natural History of New York"

BY AUG. R. GROTE, A. M.

[*Read before this Society, Sept.* 18, 1874.]

THE subtitle of the volume which is devoted to Entomology in the "Natural History of New York" reads: "Agriculture of New York: comprising an account of the classification, composition and distribution of the soils and rocks, and of the climate and agricultural productions of the State; together with descriptions of the more common and injurious species of Insects. By E. Emmons, M. D. Volume V. Albany: printed by C. Van Benthuysen, 1854." The Preface concludes with the following exposition of the character of the contents of the volume: "I have figured such insects as I have seen, and know to belong to New York and New England; but I have not seen them in all their states, and am therefore frequently indebted to others for the figures given of the larva and pupa stages. Some are copied from Abbott & Smith's work on the insects of Georgia, and some from other works of like kind. I have figured very few foreign species, and these have had some special purpose in view. The figures have been drawn from specimens of the insects themselves, by E. Emmons, Jr., and are faithful and accurate portraits of the individuals from which they were taken. It is difficult, however, to secure a finished and uniform coloring, especially for l ge an edition as three thousand copies. I do not deem it c to point out the faults of this volume; for the keen sighted, who are disposed to look after them will find them with ible. I am persuaded, however, that the general reader, as the ident, will find in it many valuable records."

of the text and an examination of the figures of the to persuade us that this volume contains anything like record of any of the species. The severest fault com- the insincerity of not usually especially indicating in the owed figures and matter, so that it is difficult to find out exactly what is original and what is copied from older writers. No new species are described and no new facts of importance are given in the text, so that our interest is confined to a determination of the species represented, and which are frequently unnamed or incorrectly named in the text. With regard to the apologetic statement as to the coloring, we think that a great uniformity has in reality been secured and that by the simplest means, viz., that of painting a variegated insect of a single color, as for instance *Scoliopteryx libatrix,* Plate 45, fig. 3. The copies from Drury and Abbot and Smith are generally grossly and inaccurately colored, the thorax and abdomen of *Catocala epione,* for instance, being represented of a brilliant blue. The defects are, however, too general to merit detailed attention, and are merely mentioned so that the issuance of a fresh volume on the Entomology of the State may be fully excused. The error of position, by which the original subjects are generally represented with their wings deflexed, is a main defect of the illustrations of the moths, while the text combines glaring faults of classification with instances of correct description which sufficiently show its compilatory character. The moths represented on the Plates are as follows:

Plate 6. "Attacus prometheus, figs. 1 to 4."
The figure of the cocoon is uncharacteristic, otherwise the species, *Callosamia promethea* (Drury), is recognizably given.

Plate 6. "Loxotaenia rosaceana, figs. 8 to 11."
The species intended is perhaps *Tortrix rosaceana* (Harris).

Plate 36. "Dryocampa pellucida, figs. 1, 3, a, c," and "Phalaena quercaria, figs. 2, 4, b, d," are copies from Abbot and Smith's work on the Insects of Georgia.

Plate 37. "Phalaena (Orgyia) leucostigma, figs. 1, a, b, c, f," and "Phalaena neustria, figs. 2, 4, d, g," and "Phalaena albifrons, figs. 3, 5, e, h," are copies from Abbot and Smith.

Plate 38. "Sphinx octomaculatus, figs. 2, a, b," copied from Abbot and Smith.

Plate 39. "Attacus luna, figs. 1, a. b," and "Saturnia maia, figs. 2, 3, c, d, e," are bad copies from Abbot and Smith, the latter credited to the original in the text, p. 232.

Plate 40. "Sphinx Brontes, fig. 1."

This is a copy of Drury, Vol. 2, Pl. 29, fig. 3. I have shown, Proc. Ent. Soc. Phil., Vol. 5, p. 69, that the species is probably West Indian.

id. "Geometra argentata, fig. 2."

This is a copy of Drury, Vol. 2, Pl. 14, fig. 4. There is no allusion to the figure in Emmons' text. Drury states that he has received the species from New England. There is no doubt that Drury represents the species since described as *Urola chamaechrysella* by Walker, and that this, following the laws of priority, should be known in future as ARGYRIA ARGENTATA.

id. "Glaucopis pholus, fig. 3."

This, although representing so common an insect, seems to be a copy of Drury, Vol. 2, Pl. 28, fig. 3.

id. "Smerinthus astylus, fig. 4," "Dryocampa virginiensis, fig. 5," "Geometra serrata, fig. 6," are all copies from Drury. Figure 7, "Dryocampa imperialis" is also a copy of Drury's Plate 9, fig. 1, which is a coarse figure of our species much better represented by Abbot.

Plate 41. "Phalaena dione, fig. 1, 4, 6, 8."

These are copies from Abbot of *Arctia arge*, previously illustrated by Drury, 1, Pl. 18, fig. 3 (not "2" as cited by Dr. Packard, Proc. Ent. Soc. Phil., 1864, p. 118).

id. "Spilosoma arge, fig. 3."

This represents the same species as the preceding, but is a copy of Drury's figure above cited.

id. "Spilosoma acraea, fig. 2 (male) and fig. 5 (female)."

These are copies of Drury, Plate 3, figs. 3 and 2.

id. "Spilosoma cunea, fig. 7."

This is a copy of Drury, 1, Plate 18, fig. 4.

id. "Spilosoma egle, fig. 11."

This is a copy from Drury, 2, Plate 20, fig. 3.

id. "Bupalus catenarius, fig. 10."

This is a copy of Drury, 1, Plate 8, fig. 3.

id. "Spilosoma nais, fig. 9."

This is a copy of Drury, 1, Plate 7, fig. 3.

Plate 42. "Noctua squamularis, fig. 1, Geometra transversalis, fig. 2, Erebus edusa, fig. 3, Noctua undularis, fig. 4, Catocala affinis, fig. 5, Noctua lunata, fig. 6, Noctua (Acontia) nundina, fig. 7, Catocala epione, fig. 8, Noctua (Acontia) margaritata, fig. 9, Sphinx carolina, fig. 10, are all copies from Drury. The nomenclature, as well perhaps as the figures, are taken from Westwood's Edition, which, as far as the coloring of the Plates is concerned, is inferior to the original.

Plate 43. "Phalaena phyllira, fig. 8."
This is a copy of Abbot's figure.

id. "Callimorpha epimenis, fig. 10."
This is a copy of Drury's fig. 3, Plate 29, Vol. 3.

Plate 44. "Attacus polyphemus, fig. 1."
This figure and the rest on this Plate are probably original. The wings are partially deflexed and drawing and coloring are alike bad. This figure represents Telea polyphemus (*Linn*).

id. "Sphinx (Philampilus?) pampinatrix, fig. 2."
The species seems to be Darapsa myron (*Cram.*).

id. "Catocala amasia, fig. 3."

The determination is erroneous. The species represented is Parthenos nubilis *Hübner*.

id. "Attacus cecropia, fig. 4."
The figure represents Platysamia cecropia (*Linn.*).

Plate 45. "Clisiocampa americana, fig. 1."
Seems rather to represent C. sylvatica *Harris*. The drawing and coloring of this Plate, which appears to have been made from actual specimens, are alike indifferent as in Plate 44.

id. "Agrotis? fig. 2."
The figure represents Hadena arctica (*Boisduval*).

id. "Geometra? fig. 3."
From the shape of the primaries the species intended seems to be Scoliopteryx libatrix (*Linn.*).

id. "Arctia virginica, fig. 4."
The determination is erroneous. The figure seems to represent Hyphantria textor *Harris*.

id. “Philampelus satellitia, fig. 5.”

The species is now more correctly known as Philampelus pandorus (*Hübner*).

id. “Undescribed? fig. 6.”

The figure represents a Geometrid, unidentified by us.

id. “Undescribed? fig. 7”

The figure probably represents Lithacodes fasciola (*H.-S.*).

id. “Undescribed? fig. 8.”

The figure probably represents Eustrotia synochitis (*G. & R.*).

id. “Bombyx? (undescribed), fig. 9.”

The figure represents the male Cressonia juglandis (*Abb. & Sm.*).

id. “Agrotis ——, fig. 10.”

Perhaps the figure represents Agrotis tessellata *Harris*.

id. “Agrotis ——, fig. 11.”

The figure represents Agrotis suffusa (*W. V.*).

Plate 46. “Deiopeia bella, fig. 5.”

The determination is correct; the insect is now regarded as a form of Utetheisa ornatrix (*Linn.*).

id. “Undescribed? fig. 6.”

The species represented is Angerona crocataria (*Fabr.*).

Plate 47. “Callimorpha parthenice, fig. 3.”

The insect represented is Arctia virgo (*L.*), with which Kirby's species is probably synonymous.

id. “Callimorpha virguncula, fig. 5.”

The insect figured is probably Arctia virguncula (*Kirby*), although the hind wings are erroneously colored.

id. “Eudryas grata, fig. 8.”

This determination is correct. On this Plate outline figures are given also of “Carpocapsa pomonella, fig. 4” and “Adela Degeerella, fig. 7.”

If, in 1854, the appreciation of the value of Entomology warranted the publication of Dr. Emmons' volume, certainly its substitution in 1874, by a more correct work, is demanded alike by the present status of the Science and the honor of the State of New York.

XII. A List of the Leptidae, Mydaidae and Dasypogonina of North America

BY CH. R. OSTEN SACKEN.

[*Read before this Society, Oct.* 10, 1874.]

OWING to the large increase in the number of the described species of North American Diptera since the publication of my "Catalogue" (Washington, Smithsonian Institution, 1858), a new catalogue of the same kind becomes a matter of necessity. I will endeavor to prepare such a work, not exactly on the same plan with the former, but with the improvements required by the present state of the science. Instead of merely compilatory, the new catalogue will be synonymical, at least as far as our present knowledge admits of it.

Of course, I could not attempt such a publication with much hope of success, without the prospect of the assistance of my friend and valued correspondent, Dr. Loew. The labor he has devoted for the last fifteen years to the study of American Diptera, places him at the head of those who know anything about this branch of the American fauna. On his assistance I have drawn, and mean to draw largely during my work.

The geographical area of the new catalogue will be the same as that of the old one. That is, it will embrace the North American Continent as far as the Isthmus of Panama. But in order to facilitate the survey of the species found within the United States, I intend to arrange the species of each genus in three groups, the first of which will embrace the Atlantic States, the second the Pacific States, and the third the tropical countries (Mexico, Central America and the West Indies). For the dividing line between the Atlantic and Pacific provinces, I take the line of the water-shed of the two Oceans. A species belonging to two groups simultaneously will be placed in the earlier group. Within each group the species will be arranged alphabetically.

The aim of the publication of the fragment of a catalogue given below, is to test the practicability of the new plan which I propose to adopt. The principal portion of this fragment is, perhaps more than any other portion of the catalogue will be, the work of Mr. Loew. Since the monograph published by him twenty-five years ago in the Linnaea Entomologica, the *Asilidae* were his favorite family. Among the *Asilidae* of North America, the *Dasypogonina* attracted his especial attention, as the number of species described and that of the new genera created, sufficiently proves. For the list which I give below, Mr. Loew contributed the sequence of the genera, the distribution of the species among the genera, and many of the synonymies. My work has been to complete the references, to suggest some synonymies, and to verify the whole, so as to insure correctness and avoid omissions. Synonymies and observations given on the authority of Mr. Loew are marked [Lw.]. In the same way synonymies given on the authority of other authors are marked with their name. In cases of synonymy I have admitted priority only when the earlier description was sufficiently distinct to enable a reasonably certain identification. By a somewhat bold interpretation of some of the older descriptions, I believed in some cases to have identified some of the species published much later by Mr. Loew. But it would be imprudent fully to adopt these synonymies, without a careful comparison of the original specimens, some of which, may be, are no longer in existence.

Species unknown to Mr. Loew or to myself, have been referred to the newly formed genera hypothetically, upon a careful perusal of their descriptions. This applies especially to the Mexican species, placed in the genus *Diogmites*. In such cases, errors may have occurred, and some synonymies may have been overlooked.

The comparison of the number of species contained in the old and in the present catalogues, will give an idea of the progress made since 1858. The old catalogue contained 43 *Dasypogonina*, distributed among 4 genera (*Ceraturgus, Dioctria, Dasypogon, Leptogaster*). The new list embraces 141 species and 28 genera (68 species from the Atlantic States, 18 from the Pacific, and 55 from the tropical countries). As the fauna of the Atlantic States is, for us, the object of a more immediate interest, I will state that among the 68 species from this section of the country enumerated below, 58 are actually represented in our collections. Of these 58 species, not more than *ten* are found in the old catalogue, the remaining 48 thus representing the progress made in the knowledge of the fauna since its publication.

The *Leptidae* in the present list contain 47 species (30 Atlantic, 6 Pacific and 11 tropical), against 32 species of the old list (all from the Atlantic States, but at least five of which drop off as synonyms).

The *Myduidae* contain 28 species (16 Atlantic, 3 Pacific and 9 tropical), against 15 (8 Atlantic and 7 tropical) of the old catalogue.

The stars prefixed to the specific names in the following list, indicate the species contained in Mr. Loew's collection, or in the Museum of Comparative Zoology.

As an appendix, I give the description of three new species of Mydas, one of which was recently discovered in the State of New York.

Family LEPTIDAE.

TRIPTOTRICHA.

Loew, Cent. X, 15; *id.* Berl. Ent. Z., 1874, p. 381, note.

***fasciventris** *Loew*, Berl. Ent. Z., 1874, p. 380. Pennsylvania.
***rufithorax** *Say*, J. Ac. Phil. III, p. 36, 5 (*Leptis*); Wiedemann, Auss. Zw. I, p. 223 (*id.*). Pennsylvania; New York; Kentucky.

***discolor** *Loew*, Berl. Ent. Z. 1874, p. 379. San Francisco.
***lauta** *Loew*, Centur. X, 15; comp. also Berl. Ent. Z., 1874, p. 382. California.

PHENEUS.

Walker, Dipt. Saunders.

tibialis *Walker*, Dipt. Saund. p. 156. Tab. IV, fig. 3. Jamaica.

N. B.—Mr. Walker refers this genus to the Asilidae. I place it here on the authority of Mr. Loew (*in litt.*).

CHRYSOPILA.

Macquart, Dipt. du Nord de la France, 1827.

***basilaris** *Say*, Journ. Ac. Phil. III, p. 36, 4 (*Leptis*); Wiedemann, Auss. Zw. I, p. 228, 16, (*id.*) Walker, List, etc., I, p. 217. Pennsylvania.

***fasciata** *Say*, J. Acad. Phil. III, p. 37, 7; Amer. Entom., Tab. XIII (*Leptis*); Wiedemann, Auss. Zw. I, p. 225, 9 (*id.*). Middle and Northern States.
par Walker, List, etc., I, p. 215.
***foeda** *Loew*, Centur. I, 18. Illinois.
***modesta** *Loew*, Centur. X, 14. Texas.
***ornata** *Say*, J. Acad. Phil. III, p. 34, 1; Amer. Entom., Tab. XIII (*Leptis*). Wiedemann, Auss. Zw. I, p. 221, 1 (*id.*). Walker, List, etc., I, p. 213 (re-described, the identification being doubtful). United States (common).
propinqua *Walker*, List, etc., I, p. 215. Trenton Falls.
simillima Walker, List, etc., I, p. 215. Trenton Falls. [♂ ; synonymy by Walker, with a doubt.]
***proxima** *Walker*, List, etc., I, p. 214. Northern States and British Possessions, not rare.
***quadrata** *Say*, J. Ac. Phil. III, 35, 3 (*Leptis*); Wiedemann, Auss. Zw. I, p. 226, 11 (*id.*) Walker, List, etc., I, p. 216. North America (common).
fumipennis Say, J. Ac. Phil. III, p. 37, 6 (*Leptis*). Wiedemann, Auss. Zw. I, p. 227, 12. (*id.*) Walker, List, etc., I, p. 217 [♂].
reflexa Walker, List, etc., I, p. 216 [♀].
dispar v. d. Wulp. Tijdschr. v. Ent. 2 Ser. II, p. 143. Tab. IV, fig. 6–11.
***rotundipennis** *Loew*, Centur. I, 19. Georgia.
Servillei *Guérin*, Iconogr., etc., Texte, III, p. 541. Tab. XCVI, fig. 3 (*Leptis*). North America.

[I suspect that this is nothing but *Chr. ornata*. But the femora are said to be brown?]

***thoracica** *Fabricius*, Syst. Antl. p. 70, 4 (*Leptis*). Wiedemann, Auss. Zw. I, p. 223, 2 (*id.*); Macquart, Dipt. Exot. II, 1, p. 32; Tab. III, bis, fig. 3. Walker, List, etc., I, p. 214. North America (common).
***velutina** *Loew*, Centur. I, 17. Illinois, Kentucky.

***humilis** *Loew*, Berl. Ent. Z. 1874, p. 379. San Francisco.

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basalis *Walker*, Trans. Ent. Soc. N. Ser. V, p. 285. Mexico.
***ludens** *Loew*, Wien. Entom. Mon. V, p. 34. Cuba.
mexicana *Bellardi*, Saggio, etc., II, p. 96. Mexico.
nigra *Bellardi*, Saggio, etc., App. p. 27. Mexico.
trifasciata *Walker*, Trans. Ent. Soc. N. Ser. V. p. 284. Mexico.

LEPTIS.

Fabricius, Syst. Antl. p. 69, 1805; Meigen, Syst. Besch. Vol. II.

albicornis *Say*, J. Acad. Phil. III, p. 38, 9; Amer. Entom. Tab. XIII. Wiedemann, Auss. Zw. I, p. 223; Walker, List, etc., I, p. 212 (*Rhagio*). Penn.
Boscii *Macquart*, Dipt. Exot. II, 1, p. 30, 2. Carolina.

***dimidiata** *Loew*, Centur. III, 17. Sitka.
***hirta** *Loew*, Centur. I, 21. Illinois.
intermedia *Walker*, List, etc., I, p. 212 (*Rhagio*). Hudson Bay Territory.
***mystacea** *Macquart*, Dipt. Exot. II, 1, p. 30, 1; Tab. III, *bis*. fig. 2. Walker, List, etc., I, p. 212, and IV, p. 1153 (*Rhagio*), re-described, the identification being doubtful. North America (not rare).
***ochracea** *Loew*, Centur. II, 3. New York.
***punctipennis** *Say*, J. Acad. Phil. III, p. 34, 2. Wiedemann, Auss. Zw. I, p. 227, Middle and Northern States (common).
filia Walker, List, etc., I, p. 219 (*Atherix*).

[Walker's description points rather to *L. plumbea*. But he says: halteres with a brown knob?]

***plumbea** *Say*, J. Ac. Phil. III, p. 39, 10. Wiedemann, Auss. Zw. I, p. 228. Walker, List, etc., I, p. 217. Middle States.
griseola v. d. Wulp. Tijd. v. Ent. 2 Sec. II, p. 142, Tab. IV, fig. 5. [Loew, Zeitsch, f. Ges. Naturw. 1870, p. 115.]
***terminalis** *Loew*, Centur. I, 20. New York.
***scapularis** *Loew*, Centur. I, 22. Illinois, New York, District Columbia.
vertebrata *Say*, J. Acad. Phil. III, 38, 8, Amer. Entom. Tab. XIII. Wiedemann, Auss. Zw. I, p. 224, 7. Florida.

***costata** *Loew*, Centur. II, 4. California.
***incisa** *Loew*, Centur. X, 16. California.

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bitaeniata *Bellardi*, Saggio, etc., App. p. 26, fig. 14. Mexico.
cinerea *Bellardi*, Saggio etc., II, p. 95. Mexico.
polytaeniata *Bellardi*, Saggio etc., App. p. 27, f. 13. Mexico.

PTIOLINA.

Zetterstedt, Dipt. Scand. I, p. 226; *Staeger*, to whom the genus is attributed, seems merely to have named but not characterized it. Compare also Schiner, Dipt. Aust. I, p. 179.

***fasciata** *Loew*, Centur. IX, 65. British North America.
***majuscula** *Loew*, Centur. IX, 66. British North America.

ATHERIX.

Meigen, Illig. Magaz. II, p. 271, 1803.

***variegata** *Walker*, List, etc., I, 128. Northern States, and British Possessions.
* ? **vidua** *Walker*, List, etc., IV, p. 1153. Hudson Bay.

***varicornis** *Loew*, Centur. X, 13. California.

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latipennis *Bellardi*, Saggio, etc., II, p. 93. Mexico.
longipes *Bellardi*, Saggio, etc., II, p. 94, Tab. II, fig. 17. Mexico.

Family **MYDAIDAE.**

LEPTOMYDAS.

Gerstaecker, Stett. Ent. Zeit. 1868.

***venosus** *Loew*, Cent. VII, 26. Pecos River, Western Texas.

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pantherinus *Gerstaecker*, Stett. Ent. Z. 1868, p. 85. California.
***tenuipes** *Loew*, Cent. X, 20. California.

MYDAS.

Fabricius, Entom. System, IV, p. 252, 1794.

***audax** n. s. Kentucky. (See appendix.)
***carbonifer** n. s. New York. (See appendix.)
***chrysostomus** n. s. Texas. (See appendix.)
***clavatus** *Drury*, Illustr. of Nat. Hist. I, p. 103, Tab. 44, fig. 1, and Vol. II, App. (*Musca*); Westwood, Arc. Ent. I, p. 51, 14.
asiloides Degeer, VI, Tab. XXIX, fig. 6 (*Nemotelus*).
illucens Fabricius, Syst. Ent. 756, 1 (*Bibio*).
filata Fabricius, Spec. Ins. II, p. 412 (*Bibio*); Mantissa, p. 328, 1; (*id.*) Ent. Syst. IV, p. 252 (*Mydas*); Syst. antl. p. 60, 1; (*id.*) Olivier, Encycl. Meth. VIII, 83, 1; Wiedemann, Dipt. Exot. 116, 2; Auss. Zw. Ins. I, p. 240, 3. Monogr. Midar. Tab. 53, fig. 8 (for the quotations from Latreille and Dumeril, see Wiedemann); Walker, List, etc., I, p. 228; VI, p. 361.

[Fabricius, in the Syst. Ent., perhaps in consequence of a *lapsus calami* writes *illucens* for *filata* and *vice versa*. In the Spec. Insectorum, as if becoming av [illegible] e of his error, he correctly quotes Syst. Ent. 756, 1 (which is *B. illucens*) as a s [illegible] m of his *B. filatus*. Wiedemann, in *Monogr. Midar.*, and Westwood, [illegible] quote correctly *B. illucens*, Syst. Ent. 756, 1; Gerstaecker erroneously [illegible] st. Ent. 757, 2 (which is *Hermetia illucens*).]

[illegible] *Westwood*, Arcan. Ent. I, p. 51, Tab. XIII, fig. 3. North America?
[illegible] *Walsh*, Proc. Bost. Soc. N. H. IX, p. 306. Illinois.
[illegible] *Illiger*, Magaz. I, p. 206; Wied. Mon. Mid. p. 47, Tab. LIII, fig. 13. Georgia.

incisus *Macquart*, Dipt. Exot. I, 2, p. 11, Tab. I, fig. 1. Carolina.
***luteipennis** *Loew*, Cent. VII, 23. Pecos River, Western Texas.
maculiventris *Westwood*, Lond. and Edinb. Phil. Mag. 1835, Arc. Ent. I, p. 53, Tab. XIII, fig. 5. Georgia.
pachygaster *Westwood*, Arc. Ent. I, p. 53, Tab. XIII, fig. 4. Georgia.
parvulus *Westwood*, Arc. Ent. I, p. 53, Tab. XIII, fig. 6. Georgia (Westw.), Florida (Walk.).
***simplex** *Loew*, Cent. VII, 25. Pecos River, Western Texas.
***tibialis** *Wiedemann*, Mon. Mid. p. 42, Tab. LIII, fig. 6, Bellardi, Saggio, etc., II, p. 6. Maryland; Michigan; Mexico (Bellardi).
***xanthopterus** *Loew*, Cent. VII, 24. Pecos River, Western Texas.
lavatus Gerstaecker, Stett. E. Z. 1868, p. 96. Mexico.

***ventralis** *Gerstaecker*, Stett. Ent. Z. 1868, p. 102. California.
rufiventris Loew, Cent. VII, 22 [change of name by Gerst.].

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annularis *Gerstaecker*, Stett. E. Z. 1868, p. 100. Mexico.
basalis *Westwood*, Arc. Ent. I, p. 53, Bellardi, Saggio, etc., II, p. 10. Mexico.
bitaeniatus *Bellardi*, Saggio, etc., II, p. 7, Tab. I, fig. 1. Mexico.
interruptus *Wiedemann*, Monogr. Mid. p. 46, Tab. LIII, fig. 12. Mexico.
tricinctus Bellardi, Saggio, etc., II, p. 8, Tab. I, fig. 2 [Gerst.].
militaris *Gerstaecker*, Stett. E. Z. 1868, p. 99. Mexico.
vittatus Macquart, Dipt. Exot. 4e Suppl. p. 60, Tab. IV, fig. 6, Bellardi, Saggio, etc., II, p. 7 [change of name by Gerst.].
rubidapex *Wiedemann*, Monogr. Mid. p. 40, Tab. 52, fig. 2 (♂), Auss. Zw. II, p. 626, Bellardi, Saggio, etc., II, p. 5. Mexico.
senilis *Westwood*, Arc. Ent. I, p. 52. Mexico.
subinterruptus *Bellardi*, Saggio, etc., II, p. 10, Tab. I, fig. 3. Mexico.
tricolor *Wiedemann*, Mon. Mid. p. 42, Tab. 53, fig. 5. Bigot, R. de la Sagra, etc., p. 799. Cuba.

[According to Mr. Walker, List, etc., I, p. 228, *Dolichogaster* (Mydas) *brevicornis* Wied. (variet. *iopterus* Wied.) from Brazil, also occurs in Florida and Massachusetts.]

Family ASILIDAE.

Section DASYPOGONINA.

DIVISION A.—Front tibiae without spurs.

LEPTOGASTER.

Meigen, Illig. Mag. 1803 and System. Beschr. I, p. 342.

***badius** *Loew*, Centur. II, 6. Illinois.
***brevicornis** *Loew*, Centur. X, 23. Texas.
carolinensis *Schiner*, Verh. Z. B. Ges. 1866, p. 696. Carolina.
  nitidus Macquart, Dipt. Exot. I, 2, 155, 1, Tab. XII, fig. 7 (*Gonypes*); Walker, List, etc., VII, 769.

[The name *L. nitidus* having been used for several other species, Mr. Loew (Linn. Entom. II, p. 395), proposed for the present one the name of *L. gigas*, which he thought was originally intended for it by Macquart, as it is engraved on the plate. But the name on the plate refers to *L. Audouinii*, and thus that proposed by Schiner has to be adopted.]

***eudicranus** *Loew*, Berl. Ent. Z. 1874, p. 353. Texas.
***favillaceus** *Loew*, Centur. II, 12. Connecticut.
***flavipes** *Loew*, Centur. II, 15. United States (not rare).
  flavicornis v. d. Wulp, Tijdschr. v. Ent. 2 Ser. II, p. 136. Wisconsin [Lw.].
***incisuralis** *Loew*, Centur. II, 11. Illinois.
***histrio** *Wiedemann*, Auss. Zw. I, p. 535, 5, Walker, List, etc., VII, p. 769. Pennsylvania.
  annulatus Say, J. Acad. Phil. III. p. 75, 1 [Wied.].
***murinus** *Loew*, Cent. II, 9. Nebraska.
ochraceus *Schiner*, Verh. Zool. Bot. Ges. XVII, p. 359. Pennsylvania.
***pictipes** *Loew*, Centur. II, 7. Illinois.
***tenuipes** *Loew*, Centur. II, 14. District Columbia.
***testaceus** *Loew*, Centur. II, 10. New York.
***varipes** *Loew*, Centur. II, 8. District Columbia.

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cubensis *Bigot*, R. de la Sagra's Hist. etc., p. 792 (*Gonypes*). Cuba.
fervens *Wiedemann*, Auss. Zw. II, p. 646. Mexico.
***obscuripes** *Loew*, Centur. II, 13. Cuba.
  Rumani Jaennicke, Neue Exot. Dipt. p. 46. Cuba [Lw.].
Truquii *Bellardi*, Saggio, etc., II, p. 87, Tab. II, fig. 18. Mexico.

CERATURGUS.

Wiedemann, Auss. Zweifl. I, p. 414, 1828.

aurulentus *Fabricius*, Syst. Antl. p. 166, 11 (*Dasypogon*); Wiedemann, Anal. Ent. p. 12 (*id.*); Dipt. Exot. I, p. 228, 26 (*id.*); Auss. Zw. I, p. 414, 1; Tab. V, fig. 5. Macq. Hist. Nat. Dipt. I, p. 239, 1; Tab. VII, fig. 4 (head). Walker, List, etc., VI, p. 378. New York (Fab.).

cornutus *Wiedemann*, Auss. Zw. I, p. 382 (*Dasypogon*). Patria unknown. [Supposed by Mr. Loew to be from North America; compare his Beschr. Europ. Dipterea, III, p. 124.]

***cruciatus** *Say*, J. Acad. Phil. III, p. 52, 6 (*Dasypogon*); Wiedemann, Auss. Zw. I, p. 381, 24 (*id.*). Walker, List, etc., VI, p. 426. Arkansas (Say); New York.

fasciatus Walker, List, etc., II, p. 367. [Synonymy by Loew, Beschr. Europ. Dipt. III, p. 124.]

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dimidiatus *Macquart*, Dipt. Exot. 2e Supplem. p. 35, 56 (*Dasypogon*); Walker, List, etc., VI, p. 428; Bellardi, Saggio, etc., II, p. 61 (*Ceraturgus*). Mexico.

niger *Macquart*, Dipt. Exot. I, 2, 25, Tab. II, fig. 1; Walker, List, etc., VI, p. 378. North America (Macquart); Mexico (Walker).

***rufipennis** *Macquart*, Dipt. Exot. 2e Suppl. p. 32, 2. Walker, List, etc., VI, p. 378. Bellardi, Saggio, etc., II, p. 59. Mexico.

vitripennis *Bellardi*, Saggio, etc., II, p. 60. Mexico.

DIOCTRIA.

Meigen, Illig. Magaz. 1803; System. Beschr. Vol. II.

***Albius** *Walker*, List, etc., II, p. 301. New York, Massachusetts, etc.

***resplendens** *Loew*, Centur. X, 21. California.

ECHTHODOPA.

Loew, Centur. VII, 27, 1866.

***formosa** *Loew*, Centur. X, 22. Pennsylvania.

***pubera** *Loew*, Centur. VII, 27. Nebraska.

PLESIOMMA.

Macquart, Dipt. Exot. I, 2, p. 54, 1838.

***unicolor** *Loew*, Centur. VII, 35. New Mexico.

***funesta** *Loew*, Wien. Ent. Mon. V, p. 35; Centur. VII, 31. Cuba.

lugubris Jaennicke, Neue Exot. Dipt. p. 48 (*Dioctria*). Cuba [Lw.].

***indecora** *Loew*, Centur. VII, 33. Cuba.
***leptogastra** *Loew*, Centur. VII, 32. Cuba.
***lineata** *Fabricius*, Spec. Ins. II, p. 465, 28; Entom. Syst. IV, p. 386, 47. (*Asilus*); Syst. Antl. p. 167, 13. Wiedemann, Dipt. Exot. I, p. 221, 12. (*Dasypogon*); Auss. Zweifl. I, p. 385, 29 (*id.*). Walker, List, etc., VI, p. 428, Schiner, Verb. Zool. Bot. Ges. 1867, p. 374. West Indies.
***macra** *Loew*, Wien. Entom. Zeitschr. V, p. 35; Centur. VII, 34. Cuba.
longiventris Schiner, Verh. Z. Bot. Ges. 1867, p. 375. [Lw.]

[Is easily distinguished from *P. lineata* Fab. by the different picture of the wings. Lw.]

MICROSTYLUM.

Macquart, Dipt. Exot. I, 2, p. 26, 1838.

***galactodes** *Loew*, Centur. VII, 44. Pecos River, Western Texas.
***morosum** *Loew*, Centur. X, 27. Dallas, Texas.

OSPRIOCERUS.

Loew, Centur. VII, 51, 1866.

***Aeacus** *Wiedemann*, Auss. Zw. II, p. 390 (*Dasypogon*). Western Territories.
abdominalis Say, Long's Exped. App. p. 375 (*Dasypogon*). [Wied.]
spathulatus Bellardi, Saggio, etc., II, p. 82, Tab. I, fig. 9 (*Dasypogon*) [Lw.]. Mexico.
***eutrophus** *Loew*, Berl. Ent. Z. 1874, p. 355. Texas.
***Rhadamantus** *Loew*, Centur. VII, 52. Pecos River, Western Texas.

***Aeacides** *Loew*, Centur. VII, 51. California.

ABLAUTATUS.

Loew, Berl. Ent. Z. 1874, p. 377; *Ablautus*, Loew, Centur. VII, 63, 1866.

***trifarius** *Loew*, Centur. VII, 63. California.

STENOPOGON.

Loew, Linn. Entom. II, p. 453, 1847.

***consanguineus** *Loew*, Cent. VII, 48. Nebraska.
***inquinatus** *Loew*, Cent. VII, 47. Nebraska.
***latipennis** *Loew*, Centur. VII, 49. Pecos River, Western Texas.
***longulus** *Loew*, Centur. VII, 50. Pecos River, Texas.
***modestus** *Loew*, Centur. VII, 46. Red River of the North.

ochraceus *v. d. Wulp,* Tijdschr. Ent. Ser. 2, V, p. 212, Tab. IX, fig. 6. North America.

subulatus *Wiedemann,* Auss. Zw. I, p. 375, 14 (*Dasypogon*); Walker, List, etc., I, p. 311 and VI, p. 422 (*id.*). Georgia.

***breviusculus** *Loew,* Centur. X, 48. California.

***gratus** *Loew,* Centur. X, 31. California.

univittatus Loew, Cent. X, 29, ♀ [Synonymy suggested by Mr. Loew himself in Berl. Ent. Z. 1874, p. 358].

***obscuriventris** *Loew,* Centur. X, 30. California.

***morosus** *Loew,* Berl. Ent. Z. 1874, p. 356. Sierra Nevada, Cal.

Truquii *Bellardi,* Saggio, etc., II, p. 76, Tab. 1, fig. 10. Mexico.

[M. Bellardi refers this species to *Stenopogon* with a doubt.]

SCLEROPOGON.

Loew, Centur. VII, 45, 1866.

***picticornis** *Loew,* Centur. VII, 45. California.

***helvolus** *Loew,* Berl. Ent. Z. 1874, p. 355. Texas.

SPHAGEUS.

Loew, Centur. VII, 55, 1866.

***chalcoproctus** *Loew,* Centur. VII, 55. Cuba.

DICOLONUS.

Loew, Centur. VII, 56, 1866.

***simplex** *Loew,* Centur. VII, 56. California.

ARCHILESTRIS.

Loew, Berl. Ent. Z. 1874, p. 377; *Archilestes* Schiner, Verh. Zool. Bot. Ver. 1866, p. 672.

magnificus *Walker,* List, etc., VI, p. 427 (*Dasypogon*); Bellardi, Saggio, etc., II, p. 79, Tab. I, fig. 11 (*Microstylum*). Mexico.

668.

[illegible] Western Texas ; Dallas, Texas.

[illegible] ras, Mexico.

[illegible] 80, Tab. I, fig. 8 (*Dasypogon*).

[illegible] fig. 7 (*Dasypogon*). Mexico.

[illegible] MICUS.

[illegible] 1872.

[illegible]

[illegible] SOPOGON.

[illegible] Loew. Linn. Entom. II, p. 488, 1847.

[illegible]

[illegible] (*Dasypogon*). Trenton Falls.

[illegible]

[illegible] Mexico

[illegible] STOPOGON

[illegible] 1847

[illegible] fig. 1 (*Exarmostus* n. gen.).

[illegible] Berl. Ent. Z. 1874, p. 365,

[illegible] Walk.), Western New

[illegible]

Nova Scotia.

[illegible] Berl. Ent. Z. 1874, p. 365,

[illegible] Nevada, Cal

***leucozonus** *Loew*, Berl. Ent. Z. 1874, p. 364. Sierra Nevada, Cal.
***longimanus** *Loew*, Berl. Ent. Z. 1874, p. 360. San Francisco, Cal.
***montanus** *Loew*, Berl. Ent. Z. 1874, p. 362. Sierra Nevada, Cal.

HOLOPOGON.

Loew, Linn. Ent. II, p. 473, 1847.

***guttula** *Wiedemann*, Dipt. Exot. I, p. 228, 27 (*Dasypogon*); Auss. Zw. I, p. 411, 74 (*id.*); Walker, List, etc., II, p. 355 (description given, the identification having appeared doubtful), VI, p. 424. United States.
philadelphicus *Schiner*, Verh. Zool. Bot. Ges. XVII, p. 360; compare also Loew, Berl. Ent. Z. 1874, p. 365, note. Philadelphia.
***phaeonotus** *Loew*, Berl. Ent. Z. 1874, p. 366. Texas.
***seniculus** *Loew*, Centur. VII, 62. Nebraska.

DAULOPOGON.

Loew, Berl. Ent. Z. 1874, p. 377; *Lasiopogon* Loew, Linn. Entom. I, p. 508, 1847.

***opaculus** *Loew*, Berl. Ent. Z. 1874, p. 367. Illinois.
***tetragrammus** *Loew*, Berl. Ent. Z. 1874, p. 368. Canada.

***bivittatus** *Loew*, Centur. VII, 57 (compare also Loew, Berl. Ent. Z. 1874, p. 370, note). California.

PSILOCURUS.

Loew, Berl. Ent. Z. 1874, p. 373, note.

***nudiusculus** *Loew*, Berl. Ent. Z. 1874, p. 370. Texas.

STICHOPOGON.

Loew, Linn. Entom. II, p. 500; 1847.

***argenteus** *Say*, J. Ac. Phil. III, p. 51, 4 (*Dasypogon*); Wiedemann, Auss. Zw. I, p. 409, 69 (id.); Walker, List, etc., II, p. 354, and VI, p. 425. United States (not rare on sea-beaches).
***trifasciatus** *Say*, J. Ac. Phil. III, p. 51, 3 (*Dasypogon*); Walker, List, etc., VI, p. 424. United States (common).
    fasciventris Macquart, Dipt. Exot. 4e Suppl. p. 69, 75, Tab. VI, fig. 13 (*Dasypogon*) [Lw.]. Mexico.
    Thereva plagiata Harris, Cat. Ins. Mass. Walker, List, etc., I, p. 223 (description given) [I saw Mr. Walker's original specimen in the Brit. Mus. O. S.].

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candidus *Macquart*, Dipt. Exot. Suppl. 1, p. 67, 48 (*Dasypogon*); **Bellardi, Saggio**, etc., II, p. 78. Mexico.
gelascens Walker, Trans. Ent. Soc. N. Ser. V, p. 277 [Bellardi].

N. B.—Bellardi, l. c. p. 79, besides this synonymy, mentions the opinion of Bigot, that *S. fasciventris* Macq. is only a variety of *S. candidus*, while Mr. Loew considers it a synonym of *S. trifasciatus*.

HOLCOCEPHALA.

Jaennicke, Neue Exot. Dipt. p. 51, 1867, proposes this name instead of *Discocephala* Macquart, Dipt. Exot. I, 2, p. 50, 1838, which is preoccupied. Loew adopts this change in Berl. Ent. Z. 1874, p. 377.

***abdominalis** *Say*, J. Ac. Phil. III, p. 50, 2 (*Dasypogon*). Wiedemann, Auss. Zw. I, p. 412, 75 (*id.*). Walker, List, etc., VI, p. 426. United States (not rare in damp situations).
rufiventris Macquart, Dipt. Exot. I, 2, 50, 1, Tab. IV, fig. 2. Carolina, Brazil.
aeta Walker, List, etc., II, p. 362 (*Dasypogon*).
laticeps v. d. Wulp, Tijdschr. v. Entom. 2 Ser. II, p. 137, Tab. III, p. 10–16 (*Dasypogon*). [Loew, Z. f. Ges. Naturw. Vol. XXXVI, p. 115].
***calva** *Loew*, Centur. X, 35. Texas.

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affinis *Bellardi*, Saggio, etc., II, p. 86, Tab. I, p. 13. Mexico.
deltoidea *Bellardi*, Saggio, etc., II, p. 85, Tab. I, fig. 12. Mexico.
divisa *Walker*, Trans. Ent. Soc. N. Ser. V, p. 279. Mexico.
interlineata *Walker*, l. c. p. 279. Mexico.
longipennis *Bellardi*, Saggio, etc., II, p. 86, Tab. I, fig. 14. Mexico.
minuta *Bellardi*, l. c. p. 83. Mexico.
nitida *Wiedemann*, Auss. Zw. II, p. 603. Walker, List, etc., VI, p. 503 (*Dasypogon*); Bellardi, l. c. p. 84. Mexico.

DIVISION B.—Front tibiae with a spur on the tip.

NICOCLES.

Jaennicke, Neue Exot. Dipt. p. 47, 1867; *Pygostolus* Loew, Centur. VII, 28; this name as preoccupied, is given up by Loew, Centur. X, 24, Nota.

***argentifer** *Loew*, Centur. VII, 28. District Columbia.
***pictus** *Loew*, Centur. VII, 30. District Columbia.
Amastris Walker, List, etc., II, p. 362 (*Discocephala*). Georgia. [Walker describes a female.]

***politus** *Say*, J. Acad. Phil. III, p. 52, 5 (*Dasypogon*); Wiedemann, Auss. Zw. I, p. 405, 63. Walker, List, etc., VI, p. 421. Pennsylvania, Maryland (Say), Massachusetts (O. S.).

***aemulator** *Loew*, Centur. X, 25. California.
***dives** *Loew*, Centur. VII, 29. California.

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analis *Jaennicke*, Neue Exot. Dipt. p. 47, Tab. I, fig. 13. Mexico.

BLACODES.

Loew, Berl. Ent. Z. 1874, p. 377; *Blax*, Centur. X, 24, 1872.

***bellus** *Loew*, Centur. X, 24. Texas.

TARACTICUS.

Loew, Centur. Vol. II, p. 240, Nota.

***octopunctatus** *Say*, J. Acad. Phil. III, p. 49 (*Dioctria*); Wiedemann, Auss. Zw. I, p. 365 (*id.*). Walker, List, etc., VI, p. 387 (*id.*). North America.

[The occurrence of *Dasypogon teutonus* Linné, in North America, seems to me very improbable, although Macquart, Dipt. Exot. 4e Suppl. p. 64, mentions it as received from Florida. Hitherto not a single Asilida, common to Europe and North America, has been recorded with certainty.]

DIOGMITES.

Loew, Centur. VII, 36, 1866.

***angustipennis** *Loew*, Centur. VII, 41. Kansas; Matamoras, Mexico.
***discolor** *Loew*, Centur. VII, 37. Pennsylvania.
? *rufescens* Macquart, Hist. Natur. Dipt. I, 295, 8. Walker, List, etc., VI, p. 426 (*Dasypogon*). Philadelphia.

[This synonymy rests on the assumption that Macquart overlooked the presence of the spurs on the front tibiae.]

***Herennius** *Walker*, List, etc., II, p. 339 (*Dasypogon*). Cincinnati.
***hypomelas** *Loew*, Centur. VII, 42. New Mexico.
***misellus** *Loew*, Centur. VII, 39. District Columbia.
***platypterus** *Loew*, Centur. VII, 36. Illinois.
***symmachus** *Loew*, Centur. X, 26. Texas.

***umbrinus** *Loew*, Centur. VII, 43. New York, Massachusetts, Illinois.
? basalis Walker, Dipt. Saunders. p. 95 (*Dasypogon*). United States.

***annulatus** *Bigot*, R. de la Sagra, etc., p. 789, Tab. XX, fig. 3 (*Senobasis*). Cuba.
secabilis Walker, Trans. Ent. Soc. N. Ser. V, p. 276 (*Dasypogon*); Bellardi, Saggio, etc., II, p. 63, Tab. I, fig. 4 (*Saropogon ?*) [Lw.]. Mexico.
auricinctus Schiner, Verh. Zool. Bot. Ver. 1866, p. 371 (*Senobasis*). Surinam [Lw.].

[This species does not belong to *Senobasis* Macq. from which it differs in the structure of the antennae and of the hypopygium. It may be placed provisionally in the genus *Diogmites*, however, as a separate section.—Lw.].

affinis *Bellardi*, Saggio, etc., II, p. 73 (*Saropogon*). Mexico.
bicolor *Jaennicke*, Neue Ex. Dipt. p. 49 (*Saropogon*). Panama.
Bigotii *Bellardi*, Saggio, etc., II, p. 70 (*Saropogon*). Mexico.
***bilineatus** *Loew*, Centur. VII, 40. Cuba.
brunneus *Fabricius*, Mant. Ins. II, 359, 20 (*Asilus*); Entomol. System. IV, 382, 28 (*id.*); Syst. Antl. p. 185, 9 (*Dasypogon*). Wiedemann, Dipt. Exot. I, p. 219, 9 (*id.*). Auss. Zw. I, p. 382 (*id.*). Macquart, Dipt. Exot. I, 2; p. 34, 4 (*id.*). Walker, List, etc., VI, p. 421; Bellardi, Saggio, etc., II, p. 67 (*Saropogon*). Cayenne (Fab.); Mexico (Bellardi); Philadelphia (Macq.).

[Macquart's synonymy is not to be relied on, as he evidently mixed up several species of Diogmites.]

Craverii *Bellardi*, Saggio, etc., II, p. 68 (*Saropogon*). Mexico.
Cuantlensis *Bellardi*, Saggio, etc., II, p. 67 (*Saropogon*). Mexico.
dubius *Bellardi*, l. c. p. 74 (*Saropogon*). Mexico.
goniostigma *Bellardi*, Saggio, etc., II, p. 65, Tab. I, fig. 6 (*Saropogon*) Mexico.
Jalapensis *Bellardi*, Saggio, etc., II, p. 65, Tab. I, fig. 5 (*Saropogon*). Mexico.
nigripes *Bellardi*, Saggio, etc., II, p. 75 (*Saropogon*). Mexico.
nigripennis *Macquart*, Dipt. Exot. 2e Suppl. 34, 55, Tab. I, fig. 6 (*Dasypogon*). Walker, List, etc., VI, p. 428 (*id.*); Bellardi, Saggio, etc., II, p. 75 (*Saropogon*). Mexico.
pseudojalapensis *Bellardi*, Saggio, etc., App. p. 25 (*Dasypogon*). Mexico.
rubescens *Bellardi*, Saggio, etc., II, p. 71 (*Saropogon*). Mexico.
Sallei *Bellardi*, Saggio, etc., II, p. 70 (*Saropogon*). Mexico.
***ternatus** *Loew*, Centur. VII, 38. Cuba.
tricolor *Bellardi*, l. c. p. 72 (*Saropogon*). Mexico.
[Probably *Diogmites*, but not certain. Lw.]
virescens *Bellardi*, l. c. p. 72 (*Saropogon*). Mexico.

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Duillius *Walker*, List, etc., II, p. 340 (*Dasypogon*). Honduras.

[The description seems to betray a *Diogmites*, nevertheless certain statements render this interpretation doubtful; hence the isolated position given to this species.—Lw.].

SAROPOGON.

Loew, Linn. Entom. II, p. 439, 1847.

***adustus** *Loew*, Berl. Ent. Z. 1874, p. 375. Texas.
***combustus** *Loew*, l. c. p. 374. Texas.

LASTAURUS.

Loew, Bem. üb. d. Fam. d. Asiliden, Berlin, 1851, p. 11.

anthracinus *Loew*, Bem. üb. d. Fam. d. Asiliden, p. 12. Mexico.

[Schiner (Verh. Z. B. Ges. 1867, p. 373), identifies this species with *Dasypogon lugubris* Macq. Dipt. Exot. Suppl. 1, p. 64, from Surinam; whether correctly or not, the insufficiency of my materials does not enable me to decide.—Lw.].

OBSERVATION.—Dasyp. *sexfasciatus* Say, of the old Catalogue, belongs to the genus *Laphystia* (Laphrina).

The following species I do not know and cannot refer them to the new genera formed at the expense of *Dasypogon* in Meigen's and Wiedemann's sense.

Dasypogon albiceps *Macquart*, Dipt. Exot. 1er Suppl. p. 69, 51. Walker, List, etc., VI, p. 426. Texas.

May this not be a *Laphrina* like *D. sexfasciatus*, to which Macquart compares it?

tristis *Walker*, Dipt. Saund. p. 98. United States.

The description reminds one of *Dizonias*.

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californiae *Walker*, List, etc., II, p. 322. California.
angustus *Macquart*, Dipt. Exot. 3e Suppl. p. 20, 59, Tab. I, fig. 11. Walker, List, etc., VI, p. 429. San Domingo.
cepphicus *Say*, Journ. Ac. Phil. VI, p. 158. Mexico.
mexicanus *Macquart*, Dipt. Exot. 1er Suppl. p. 68, 49. Walker, List, etc., VI, p. 428. Mexico.
nigritarsis *Macquart*, Dipt. Exot. 1er Suppl. p. 68, 50. Walker, List, etc., VI, p. 428. Mexico.
parvus *Bigot*, R. d. la Sagra, etc., p. 789, Tab. 20, fig. 2. Cuba.

APPENDIX.

Mydas audax n. sp.

♂.—Black, second abdominal segment red *on the dorsal as well as on the ventral side;* head, thorax and first abdominal segment with whitish hairs. *Length,* 23 mm. *Wing,* 18 mm.

Very like *M. clavatus* in its coloring, but easily distinguished by its smaller size, comparatively broader head, more cylindrical shape of the abdomen, by the red color of the second segment, which does *not* encroach anteriorly, on both sides, upon the first segment (as it does in *M. clavatus*), which exists on the ventral as well as on the dorsal side of the segment, and which is *not* interrupted on the dorsal side by a more or less distinct black spot; finally, by the whitish pubescence on the head, the thorax and the first abdominal segment. Head black, broader than the thorax, clothed with soft, white hairs, mixed with black ones; the white hair is especially apparent on the vertex and the sides of the front, also as a small tuft on each side under the antennae, near the orbit of the eye, and as a border round the clypeus. Thorax black, opaque; the dorsum clothed with white hairs, forming four longitudinal bands, especially visible from a side view. First segment of the abdomen black, opaque, clothed with long, soft, erect white hair, which reaches down to the hind coxae; second segment shining, yellowish red, the remainder of the abdomen black, moderately shining. Venter black, except the second segment, which is yellowish red. Halteres and feet black, pulvilli brownish (of a darker color than in *M. clavatus*). Wings strongly tinged with brown, and with a slight purplish reflection. Venation like that of *M. clavatus.*

Belongs to Gerstaecker's first tribe, that is it has spurs at the tip of the tibiae and the small cross-vein on the posterior border of the wing.

A single male discovered in the environs of Mammoth Cave in Kentucky, by Mr. F. G. Sanborn, in June, 1874.

Mydas carbonifer n. sp.

♀.—Altogether black, thorax opaque, abdomen shining, wings brown. *Length,* 22 mm. *Wing,* 18 mm.

Black, front and epistoma shining, beset with black hair; antennae black, the expanded portion of the third joint brownish, and beset with a fine grayish pollen. Thorax opaque above, showing two velvety black longitudinal lines. Abdomen black, shining, except the first joint, which is opaque. Feet black; ungues reddish, with black tips; hind tibiae beset with strong spines, except toward their base; terminal spur strong. Halteres black; wings dark brown,

with a violet reflection; the brown somewhat fainter in the center of several cells, and along the posterior margin. Small cross-vein on posterior margin present.

Habitat, Norton's Landing, Cayuga Lake, N. Y. A single female taken in July by Mr. J. H. Comstock. This species seems not unlike *M. crassipes* Westw. in coloring, but is much smaller, has much darker wings, an opaque (and not shining) thorax, etc. (I never saw Westwood's species.)

Mydas chrysostomus n. sp.

♂.—Black, face with a tuft of golden hair, abdominal segments 2, 3, 4 with red margins posteriorly, legs black, wings tinged with brown. *Length*, 25–30 mm. *Wing*, 21 mm.

Black; the incrassated portion of third antennal joint dull reddish, except the tip, which is blackish. Face with a tuft of golden yellow hair. Thorax of a smoky black, opaque above. Abdomen black, shining, except the first segment, which is opaque; a narrow band on the posterior margins of the 2d, 3d and 4th segments rufous, edged with yellow along the margin; on the 4th segment this band is much narrower and somewhat indistinct in the middle. Feet black; hind tibiae with a strong spur; hind femora with two rows of short, but strong spines on the underside; ungues dull reddish, tipped with black. Halteres black. Wings strongly tinged with brown, although less so than in *M. clavatus.* Small cross-vein on posterior margin present.

Habitat, Dallas, Northern Texas. A single male collected by Mr. Boll. This species seems to have many characters in common with *M. fulvifrons* Illig. but it differs in the coloring of the abdomen.

XIII. Description of a New Species of Calocampa

BY J. A. LINTNER.

[*Read before this Society, Oct.* 16, 1874.]

Calocampa nupera, n. sp.

Palpi brown, fuscous beneath. Collar sinuated, pale ochraceous, traversed by a whitish line, and separated from the dark brown thorax by a fuscous stripe. Abdomen flattened, pale brown, with a tuft on first segment, of a darker brown than the thorax. Anterior wings whitish on the disc, tinged with brown; costal margin dark brown; internal margin and nervular interspaces lined with reddish (vandyke) brown, the latter cut by the dentated pale marginal band. Anterior transverse band whitish, obsolete above, but well marked below the median nervure in two acute dentations, the upper one of which bisects a blackish basilar line in cell *1b* reaching to below the reniform, and is bordered below by a similar line not extending quite so far outwardly; on the internal margin at the base, two short fuscous lines; a distinct fuscous line running from the reniform to the subterminal, between veins 4 and 5. Posterior transverse band indicated only by a black dot on each vein. Reniform large, oblong, constricted centrally, black bordered, subobsolete superiorly, with an inner ring of similar form, broadly bordered before, behind and beneath with brown, resembling that of *vetusta*. Orbicular inconspicuous, pyriform, outlined by a few blackish scales, and including a central spot of blackish scales. Nervules marked with brown scales. Posterior wings brownish-gray somewhat paler basally, with brown marginal scales between the veins, more prominent towards the apex. Beneath, thorax of a lighter brown than above; abdomen with blackish hairs; discal spot of posterior wings large, conspicuous, bisected by the pale, cross-vein, as in *vetusta;* the median band more dentate than in *vetusta* and about equal to *exoleta.*

Expanse, 2.50 inches. 2 ♂s, 1 ♀. *Habitat,* Albany and Schoharie, N. Y., April 20th and June 1st.

This species has, very strangely, been confounded with the *vetusta* of Europe, to which it bears very little resemblance. It differs markedly from that species in the presence of its conspicuous basilar rays, in the longer and better defined line in cell 4, and in the absence of the ferruginous shade over the interno-basilar portion of the wing. It is larger than *vetusta*, given by Guenée at 56 m. m. expanse, but in an example before me, from the collection of Mr. O. Meske, measuring only 1.90 in. (47 m. m.). A ♂ and ♀ example of the European *exoleta*, also of the collection of Mr. Meske, measure respectively 2.50 in. and 2 in.,—the ♀ being abnormally small.

Cal. nupera is represented in fig. 15 of a photographic plate of "Noctuidae, No. 2. Collection of J. A. Lintner," which has been distributed to a limited extent. It is also figured in No 24 of plate 82 of Glover's Lepidoptera, representing examples from the "collection of W. Saunders, London, C. W.," as *vetusta* (Glover MS.). It is inferentially the species recorded in the Grote List, p. 27, as *vetusta* of Europe and America, and the one cited by the same author in the Sixth Ann. Rep. Peab. Inst., p. 22. It may also be presumed to be the *vetusta* of the Morris Catalogue, published in 1860, the source, perhaps, of the subsequent erroneous determinations.

XIV. On the Species of Calocampa

BY H. K. MORRISON, CAMBRIDGE, MASS.

[*Read before this Society, Oct.* 16, 1874.]

RECENTLY, in comparing our species of this genus with their European analogues, we were surprised to find that the form which authors had considered identical with the European *vetusta* was, in fact, quite different from it. More extended collections, and examination of material, also brought to light another intermediate American species, between *vetusta* and *exoleta*, and which can stand as our representative of the latter. Specimens of *solidaginis* from both countries were likewise compared, and differences were found, apparently sufficient to authorize a specific separation.

It will perhaps seem to many, that the cause of the constant diminution, one by one, of the species which have been thought common to the two continents, is to be found rather in the desire of the specialist to father new names than in the discovery of sufficient and constant differentiating characters. But in most of the recent separations, as *Acronycta occidentalis* from *psi*, *Cucullia intermedia* from *umbratica*, and *Mamestra atlantica* from *W-latinum*, the differing characters are so invariable that if the species lived side by side they would be considered distinct. This is the only true test; and in this paper the author has endeavored to apply it.

CALOCAMPA, *Steph.*

Vetusta *Hubner* *Hub.*, Europe.

Supera *Lintner* *

This species fills with us the place of *vetusta*, and closely resembles it. A comparative description is therefore only necessary:

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* Since this paper was written I have learned that Mr. J. A. Lintner has come to the same conclusion in respect to Cal. vetusta and its American analogue as myself. I am indebted to Mr. Grote for the opportunity of examining one of Mr. Lintner's typical specimens.

Anterior wings colored as in *vetusta*, except that the cinereous costal basal shade is clearly defined below and not mixed with brown ; it is also confined to the space before the reniform, and does not extend beyond it, as in *vetusta*. At the base, beneath the median nervure, there is a thick, slightly curved, deep black longitudinal dash, tapered at each end. Beyond, and limiting the basal cinereous shade, are two similar clear black dashes, the lowest nearest to the base, and bearing above it a clear cinereous spot connected with the basal shade. The upper dash commences above the middle and extends beyond the lower. Both are bifurcate outwardly. Beneath these dashes the shade along the inner margin, which in *vetusta* is generally overspread with dark brown or blackish, is in *nupera* bright red. The reniform, and the black dash following it, present as in *vetusta*. Beneath the costa and the terminal space of the anteriors are red, and the posterior wings are suffused with the same color, in this differing from the pale, more ochery, colors of *vetusta*.

Hab., Cambridge, Mass., and other localities in the Eastern and Middle States. Found in the autumn and early spring.

Curvimacula (*nov. sp.*).

Expanse, 50 m. m. *Length of body*, 20 m. m.

Collar cut out and produced in front; yellowish, with a faint reddish terminal line. Thorax uniform light red; the abdomen also reddish, conical. Anterior wings with a distinct black basal dash limiting below the usual costal cinereous shade, which extends to the orbicular, and contains an elongated annulate brown spot, followed by a short dash and crescent of the same color. Below the basal dash a broad dull greenish brown shade extends over the whole inferior portion of the wings to the subterminal line. The submedian nervure blackish and beneath it a short black line. The orbicular spot is small, closely approaching the reniform. Between the two spots the median shade, which is no where else apparent, shows itself as a short black line. The former spot is blue black, with a double black annulus, which is open above. The reniform is rounded, inwardly defined, but otherwise consisting only of two subtriangular reddish spots, united at their bases. The upper spot is the darker of the two. In the median space the costa is shaded with black and brown. Beyond the spots a clear yellow shade extends to the exterior margin and along, obliterating all markings. The terminal space is also yellowish, mingled with brown. The subterminal line is preceded by dark shades, which contrast with both terminal and subterminal spaces. These shades become less distinct as they near the inner margin, and culminate above in a black dash, bordering the yellow shade. Posterior wings uniform, fuscous, with the line and discal dot very faint. Fringes light. Beneath as in *nupera*, but the fringe is white instead of dark.

Hab., Cambridge, Mass., April 15 to May 2.

The peculiar shape of the reniform and the conical abdomen, as well as its smaller size, will at once distinguish this species from the three allied to it.

Exoleta *Linn.* *Hab.*, Europe.

Ruta *Ev.* *Hab.*, Russia.

Solidaginis *H.* *Hab.*, Europe.

Germana (*nov. sp.*).

Habitus and markings of *solidaginis*, but differing in the following respects: Base of the antennae concolorous instead of white. Legs, breast and collar colored with brown. Costa on the median and subterminal spaces distinctly tinged with brown. The orbicular spot geminate, consisting of two equal, concolorous white wings. The reniform very distinct, rounded, outwardly excavated with a central white curved spot, surrounded by a dark shade—the whole enclosed within a clear fine white annulus. The median lines are nearly obsolete. The exterior line only evident opposite to the reniform; there it forms long, acute teeth on the nervules. The median shade consolidated into one broad, black, even, outwardly curved band, and not diffused throughout the median space as in *solidaginis*. Subterminal line and the two preceding dashes as in the allied species. Posterior wings uniform, dark fuscous, without median line; beneath whitish, also without line, but with a strong discal dot.

Hab., Adirondack Mountains. (Mr. Bowditch.) The strongest distinctive characters of our form are found in the shape of the reniform, and in the different shape and importance of the median lines.

XV. On allied Species of Noctuidae inhabiting Europe and North America

BY AUG. R. GROTE.

[*Read before this Society, October* 21, 1874.]

On page 22 of the Annual Report of the Trustees of the Peabody Academy of Science for the year 1873, I presented in a tabular form the species of Noctuidae regarded as common to Europe and North America, as well as those species nearly related, but which could be separated by character warranting distinctional designation. Subsequent investigations have added to and corrected the tables then prepared, and I here offer the results of late scientific enquiry on the subject.

1. *Species believed to be common to Europe and North America, exclusive of Labrador or circumpolar forms.*

EUROPE.	AMERICA.
Agrotis baja (*S. V.*).	id. *Grote*, List n. a. Noct. p. 9.
c-nigrum (*Linn.*).	id. *Guen.*, Noct. 1, p. 328.
plecta (*Linn.*).	id. *Guen.*, Noct. 1, p. 326.
fennica (*Tausch.*).	id. *Guen.*, Noct. 1, p. 270.
conflua (*Treits.*).	id. *Grote*, 6th Ann. Rep. Peab. Ac. Sci., p. 29.
rubi (*Viewig*).	id. *Grote*, Trans. Am. Ent. Soc.
saucia *Hübn.*	*Agrotis inermis* Harris.
segetum (*S. V.*).	*Agrotis texanus* Grote.
suffusa (*S. V.*).	*Agrotis telifera* Harris.
Eurois occulta *Hübn.*	id. *Grote*, Can. Ent. 6, p. 13.
herbida (*S. V.*).	id. *Guen.*, Noct. 2, p. 5.
Mamestra grandis (*Boisd.*).	This appears to be an American species extending to Northern Europe.

EUROPE.	AMERICA.
Hadena arctica *Boisd.*	*Hadena amputatrix* Fitch.
rurea (*Fabr.*).	id. *Walk.*, C. B. M. Noct. p. 171.
Dipterygia pinastri (*Linn.*).	id. *Grote*, Proc. Ent. Soc. Phil., 1, p. 218.
Euplexia lucipara (*Linn.*).	id. *Guen.*, Noct. 2, p. 68.
Heliophila pallens (*Linn.*).	id. *Guen.*, Noct. 1, p. 93.
Pyrophila tragopoginis (*Linn.*).	*Agrotis repressus* Grote.
Taeniocampa incerta (*Hufn.*).	*Taeniocampa alia* Guen.
Xanthia gilvago (*S. V.*).	id. *Grote*, Proc. Ent. Soc. Phil. 3, p. 95.
Scoliopteryx libatrix (*Linn.*).	id. *Walk.*, O. B. M. Noct., p. 1011.
Plusia bractea (*S. V.*).	id. *Grote*, List Noct. n. a. p. 30.
gamma (*Linn.*).	id. *Grote*, Can. Ent. 6, p. 16.
ni (*Hübn.*).	*Plusia brassicae* Riley.
[*]Hochenwarthi (*Hoch.*).	id. Mösch., W. E. M., 4 S. 370.
devergens (*Hübn.*).	id. Mösch., Stett. Ent. Zeit.
Anarta melanopa (*Thun.*).	*Anarta nigrolunata* Pack.
Anarta myrtilli (*L.*).	*Anarta acadiensis* Bethune.
Anarta cordigera (*Thun.*).	*Anarta luteola* G & R.
Heliothis armigera (*Hübn.*).	*Heliothis umbrosus* Grote.
Euclidia cuspidea (*Hübn.*).	id. *Guen.*, Noct. 3, p. 292.

The following species alluded to in the List of the Noctuidae of North America, 1874, as common to the two continents need verification by comparison: *Agrotis augur, Agrotis lycarum, Mamestra brassicae, Mamestra chenopodii, Naenia typica, Agrotis exclamationis, Nonagria typhae.* Of these species I have American specimens of only the first four, and their identification may be erroneous. Of the others I have seen no American specimens that could be considered to belong to the species.

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[*] I have recently received this species from Alaska through the kindness of Mr. Behrens, under the number 46. This is a different species from P. ignea *Grote* (= alticola *Walk.?*) collected by Mr. Mead in Colorado Territory.

2. *The following are closely allied forms which can be separated by appreciable differences, and are therefore entitled to a distinct name. They appear to be the so-called "analogues" of one another in the two continents, while there is a difference in degree of approximation between them.*

EUROPE.	AMERICA.
Acronycta psi (*Linn.*).	Acronycta occidentalis *G. & R.*
Acronycta alni (*Linn.*).	Acronycta funeralis *G. & R.*
Agrotis triangulum (*Hufn.*).	Agrotis Normanianus *Grote.*
Mamestra W-latinum (*Hufn.*).	Mamestra atlantica *Grote.*
Hyppa rectilinea (*Esper*).	Hyppa xylinoides *Guen.*
Pyrophila pyramidea (*L.*).	Pyrophila pyramidoides (*Guen.*).
Calymnia trapezina (*L.*).	Calymnia orina (*Guen.*).
Calocampa vetusta (*Hübn.*).	Calocampa nupera *Lintn.*
Lithomia solidaginis *Hübn.*	Lithomia germana (*Morr.*).
Lithophane socia (*Hufn.*).	Lithophane petulca *Grote.*
Plusia festucae (*L.*).	Plusia contexta *Grote.*
Catocala Elocata (*L.*).	Catocala Walshii *Edw.*

To this list might be added Cucullia intermedia *Speyer*, on account of the probability that it is the species regarded as *umbratica* by Guenée. But a close study of the specific character in the genus shows that the resemblance is not close, and perhaps, as in the case of *Catocala fraxini*, Guenée may have had a specimen before him with an erroneous habitat. Mr. Riley's statement that X. cinerea *Riley* is the "analogue" of the European *conformis* seems to me quite incorrect, and the species are not included in the foregoing table.

I have received, however, from Mr. Roland Thaxter, Newtonville, Mass., a specimen of an undescribed American Lithophane which quite nearly resembles the European *conformis*, with which I have been able to compare it, while differing in the details of the ornamentation of the primaries. I dedicate the species to its discoverer who has requested me to describe it.

Lithophane Thaxteri n. s.

♂.—Of a delicate lilac gray, the reniform shaded with ruddy. The costa at base, above the distinct basal dash, somewhat whitish. The transverse lines are tolerably distinct. The t. a. line is well removed outwardly, pale with a narrow external black edging, waved, distinctly notched on vein 1, its upper portion fused with the edging of the large orbicular. In its course the line is more outwardly oblique than in *conformis*, and further removed from the base of the wing. There is no claviform spot (evident in *conformis*), the black submedian dash running from the t. a. line itself across the median space to the t. p. line. The posterior half of the median space is darker than the basal portion limited by the median shade, much as in *conformis*. The reniform is smaller than in *conformis*, differently shaped, being excavated inwardly as well as outwardly, distinctly black edged inferiorly. The t. p. line is more distinct than in *conformis*, indicated by pale denticulations, of which one is quite noticeable where the line receives the submedian dash. The subterminal line is shaded with blackish outwardly, quite distinct and with a determinate inflection opposite the cell, not nearly so apparent in *conformis*. An oblique blackish shade above the internal angle below which the wing is whitish. The s. t. line in *conformis* is brown and more or less dotted, not shaded so distinctly with whitish anteriorly, our species approaching *Zinckenii* in the contrast of shading. Hind wings fuscous with pale fringes. Beneath rosy fuscous with obliterate faded traces of the usual markings. Thorax like the fore wings, dark at the sides. Abdomen carinated, with very minute dorsal tuftings, fuscous, rosy at the sides.

Expanse, 40 m. m. May 10th, 1874.

Our species seems in a measure intermediate between *conformis* and *Zinckenii*. I cannot consider it the American representative of either species, since it differs quite markedly on close examination, while on the whole, perhaps, nearer to *conformis*. *Thaxteri* resembles *Zinckenii* in the sharpness of the lines, the tone is, however, less cold and the suffusion of the reniform reminds us of *conformis*. The dorsal abdominal tufts are very inconspicuous, but I think are present; it would thus agree with *conformis*, which Lederer places in his first group. In my arrangement it would fall into the subgenus *Graptolitha*, my first group including only *socia* and *semibrunnea* among the European species.*

Dicopis Thaxterianus n. s.

♂.—The tibial claw is present, and the testaceous antennae are bipectinate, somewhat less heavily so than in *D. muralis*. The colors are mainly those of

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* I have received also from Mr. Thaxter a new *Dicopis* from the same locality, which I here describe.

D. *muralis*, but the fore wings are more uniformly fuscous to the subterminal line, and then the terminal space contrasts by its frosty, grayish white. Fringes distinctly chequered, fuscous and white, with the terminal line nearly obsolete, not resolved into black dots as in *D. muralis*. Ordinary spots, ill defined, whitish, the reniform inwardly sharply margined with black, smaller than in *D. muralis*; orbicular rounded, black edged. Claviform quite small, concolorous, black edged, removed from the orbicular, hence very different from that of *D. muralis*. A fine basal black ray. *No black streak above internal angle, and no black shading across the median space opposite the claviform.* The median lines are distinctly marked with black, in general shape resembling those of *D. muralis*, but differing in slight details. The primaries are more pointed than in *D. muralis*, narrower and with the exterior margin more oblique, straighter and a little depressed before internal angle. Hind wings smaller, pale fuscous with traces of a double line on the veins, and with the faint terminal line not broken into points. Beneath much as in *D. muralis*; on the hind wings the discal mark is larger and tends to fuse with the median line, the latter exserted at this place so that a fuscous O may be more or less completely outlined by the line and the discal lunate mark. Thorax hoary gray, the tegulae black lined.

Expanse, 35 m. m. Taken April 8th, 1874.

3. *The following species need comparison; they have been distinguished by name, but are, perhaps, undistinguishable by character.*

EUROPE.	AMERICA.
Heliothis dipsacea (*L.*).	Heliothis phlogophagus *G. & R.*
Scopelosoma satellitia (*L.*).	Scopelosoma sidus *Guen.*

For a specimen of the European Lithophane socia (*Hufn.*), I am indebted to the courtesy of Mr. Lintner, and I have received my type of Xylophasia vulgaris *G. & R.*, from Philadelphia, and have a second specimen from New York in the collection. A comparison shows me that I have been totally wrong in considering them synonymous. They are not even congeneric, and the entire reference in the List, p. 26, lines 22-24 must be struck out. X. vulgaris has a conical, tufted abdomen, and the shape of the broader wings is as in Hadena, rounded to the apices. The species is allied to H. cariosa (*Guen.*), and must be interpolated on page 15 of the "List" after that species as follows:

vulgaris (*G. & R.*), Proc. Ent. Soc. Phil., 6, p. 18 (*Xylophasia*), Pl. 3, fig. 2; Grote Bul. Buf. Soc. Nat. Sci. 1, p. 110 (*Hadena*).

From the specimen of *socia* it seems to me probable that *L. petulca* Grote, may have been described as an American variety by Guenée; I rely on the contiguity of the median lines on the submedian fold in our species to separate them specifically. Both species seem to be variable to a great extent in color and distinctness of ornamentation; it would, however, be incorrect with our present knowledge to draw further absolute comparisons, while I regard the character above given a very strong one. My single specimen of *socia* has a slightly deeper shading over the submedian portion of the fore wings something like that in *ferrealis* and *signosa*, and entirely unlike any specimens of *petulca* that I have yet seen in this respect.

NOTE.—As Messrs. Lintner and Morrison have recently shown before this Society, that the American species of *Calocampa* are distinct from the European, and as the determinations of Mr. Walker were accepted to the contrary in the "List," this latter must be corrected, and for the species cited on page 27 the following genera and species substituted:

*CALOCAMPA *Stephens* (1829).

Type: Axylia vetusta *Hübner*.

nupera *Lintn.*, Bul. Buf. Soc. N. S., 2, p. 188; *Morrison*, Bul. Buf. Soc. N. S., 2, p. 190.

curvimacula *Morr.*, Bul. Buf. Soc. N. Sci., 2, p. 191.

Canada: Eastern and Middle States.

*LITHOMIA *Hübner* (1816).

Type: Lithomia solidaginis *Hübner*.

germana (*Morr.*), Bul. Buf. Soc. N. Sci., 2 (*Calocampa*), p. 192.

New York.

I have received, since I prepared the "List of North American Noctuidae" for the press, Professor Zeller's second Paper on North American Moths. In this two species of Noctuidae are described and figured. They appear to me to necessitate two synonymical references. The first must be added to Erotyla apicella, on page 37, line 24 of the List as follows:

Agrophila truncatula Zell., Verh. z.-b. Gesell., 1873, S. 3, T. 3, fig. 1.

The second to Metoponia obtusa, on page 37, line 35 of the List, as follows:

Metoponia obtusula Zell., Verh. z.-b. Gesell., 1873, S. 4, T. 3, fig. 2.

I have received the Transactions of the New York Agricultural Society for 1867, in which Dr. Fitch gives an account of the immature stages of Rhodophora florida *Guenée,* on pp. 900–904. Dr. Fitch also describes as new *Alaria volupia* from "the Indian Territory west of Arkansas," on page 907. I have distinguished the two genera in my List on the peculiarity of the armature of the fore tibiae of *florida* mentioned by Guenée, p. 171, Noct. 2, as also on the different cut of the wings. In the absence of any structural details it is impossible to refer Dr. Fitch's *volupia* with certainty, but, while I express the opinion with diffidence, not having seen Dr. Fitch's type, I believe that Dr. Fitch may have described Oria sanguinea *Geyer* under the new name.

In Wood's Index Entomologicus *Ophiusa crassiuscula*, Pl. 17, fig. 436, very probably represents Drasteria erechtea ♂, and should be added to the synonymy of that species in the "List," p. 38. It seems also that *Erastria apicosa,* Pl. 17, fig. 454 is the same as Eustrotia nigritula (*Guenée*), of my "List." The former name is the oldest, so that the species will have to stand:

apicosa (*Haw.*) (*Phytometra*); *Steph.*, Haust. 3, p. 119 (*Erastria*); *Wood* In. Ent., 74, Pl. 17, fig. 464; *Erastria nigritula* Guen., Noct. 2, p. 229, Pl. 10, fig 7; *Miana undulifera* Walk., C. B. M. Noct. p. 258.*

* * *

In an endeavor to account for the relations between the existing European and American Noctuidous faunae we shall have to consider first the species that may have been artificially introduced by commerce. I think that *Heliothis armigera* may have to be included under this head; it seems to be rather a southern and eastern European species. For the origin of other species we shall have to go backwards to the Plistocene and consider the identical species as belonging to a former Arctogaeal fauna. The action of the steady increase of cold which characterized the gradual inauguration of the Ice Period would have been to drive the insects southward and mix the Arctogaeal with the then existing "indigenous" southern species. The summers of the middle Glacial Epoch probably afforded no opportunity for the existence of Noctuidae throughout the Northern States. On the decline of the Glacial Epoch and with a steady increase of warmth (still continuing) the species would progress northward again. We may regard such a species as *Fidonia fimitaria* G. & R., found in Texas, as an outlying colony of *F. fasciolaria* forced southward and retained by local influences, and possibly having submitted to the modification which enables us at this day to separate the two forms. During the Pliocene the common ancestor of the two forms may have been different from either. During the Plistocene, Holocene and Recent Periods, we must consider such species as *Hadena arctica* to have preserved their identity, while many may have perished or submitted to modifications and these latter may be represented by the closely allied species of the two faunae. The Glacial Epoch may then supercede the "Atlantis" of those Entomologists who looked for a geographical connection in former times to account for the existence of identical or representative species on the two continents.[*]

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* This article, to this point, was printed and issued October 21st, 1874, in a separate form, pp. 1-7.—*A. R. Grote.*

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[*] I append here the description of a new North American *Perigea*:

Perigea luxa n. s.

♂ ♀.—The male antennae are simple, pubescent beneath. Eyes naked, with lashes. Tibia unarmed. Abdomen carinated, with extremely minute tuftlets. The glossy fore wings are strongly widened outwardly, being narrow at base. The ornamentation is like that of *Perigea xanthioides*, but the color totally different and the size larger—blackish mixed with dirty ochery, giving the primary a mottled appearance. The lines are geminate, black, filled in with ochery, ill defined, waved or dentated. Claviform suffused with deep black, vague, subquadrate in outline. Orbicular ochery, moderate, ringed incompletely with black, with blackish center. Reniform very large, somewhat 8-shaped, being medially constricted, colored like the orbicular, with large internal black annulus. A series of white nervular points on the black subterminal space beyond the dentate ochery shaded t. p. line. Subterminal line uneven, outlined by a succeeding ochery shading. Fringes dotted with ochery at the extremity of the veins. Hind wings fuscous, a little paler at base, with pale, ocher-tinted fringes and without markings; beneath pale ochery, powdered with fuscous. Fore wings blackish except terminal space. Hind wings pale with double fuscous shade lines and discal mark. Head and thorax mixed ocherous and blackish; collar more ochery with black edging. Palpi as long as the front, ascending, with well developed closely scaled terminal joint.

Expanse, 32 m. m. New York (Mr. Meske); Alabama (Grote); Mass. (Mr. R. Thaxter).

XVI. On Attacus (Samia) Columbia and its Parasites

BY H. A. HAGEN, CAMBRIDGE, MASS.

[*Read before this Society, December* 15, 1874.]

THE new arrangement of our biological collection, drew my attention to the large New England *Attaci*, all but *Columbia* bred by myself, some of them even in very large numbers. The preparing of the objects for the collection, and the determination of the parasites bred by myself, or presented to the collection, was of course followed by a nearer study of the literature scattered in different papers.

Our stock of *Columbia* is, so far as I know, still unrivalled, containing all the types of Mr. S. I. Smith, the discoverer of the species, the types of his description as well as of his photographs. There are, of imagos, two males and one female, all Mr. Smith was able to raise, as the others were infested by an unusual number of parasites. One of the males, No. 548, of Mr. Smith's catalogue, is stated "to be developed from the pupa found upon a maple twig growing among Rhodora Canadensis; the cocoon apparently the same as this, and quite common on Rhodora." The cocoon with the same number, is still present in the collection. Nine similar cocoons all from the same collector, are still present; three are given to other collections. Besides these, twenty specimens of two species of parasites upon this species were sent. Some of these latter are still preserved in good condition, labelled by Dr. A. S. Packard, who described them in the original paper.

I was fortunate in being able to make the set more complete by opening all the cocoons, and searching carefully their contents. In two I found the caterpillar remains in tolerable condition; in one the pupa skin. The others were all filled with parasites, and I was able to take out both species described by Dr. Packard, in fragmentary condition, but sufficiently preserved for determination.

Buffalo Society of Natural Sciences 5-10-'71

Besides this, I was able to ascertain the cocoons of both parasites, the inner soft cocoon for the smaller species, and one specimen of a third species not yet mentioned. It will be agreed that the set is now tolerably complete, nevertheless there are still gaps enough for further investigation, before all the interesting facts concerning these species, can be considered as finally settled.

After the original paper by Messrs. Smith and Packard, published ten years ago in the Proc. of the Boston N. H. S., I am not aware that *Columbia* is spoken of, except in a notice by Mr. W. Couper, of Montreal, and a detailed paper by Mr. G. J. Bowles, of Quebec, with a figure of the female, all in the Volumes I and III, of the Canadian Entomologist, and a notice by Mr. Chas. V. Riley, in his fourth Report.

Concerning first the imago, the question of the validity of *Columbia* as a distinct species, is answered in the affirmative by all the authors except Mr. Riley, who states it to belong to *Cecropia* (l. c., p. 111) in the words, "Cryptus Samiae and Cr. Smithii infest the *form* that has been described as Samia Columbia."

The question whether *Columbia* is a species or not, a question which I believe is not to be considered as settled, until an exhaustive knowledge of all stages by successive breeding is made, has occupied me during the present year at several times. If *Columbia* should happen not to be a distinct species, it must be either a variety of some other species, or a hybrid of two species.

With regard to the first hypothesis (adopted by Mr. Riley, if I understand aright his expression "form" as equivalent to "variety") I can only state that in the very large number of specimens of *Cecropia,* either bred by myself, or present in our and other collections, a number exceeding two hundred specimens, I never saw a variety agreeing with *Columbia.* One small and very dark colored male, also presented by Mr. Smith, from the same locality, I considered first to be an intermediate form, but on comparing carefully the details, I find it to be *Cecropia,* although a somewhat remarkable variety. The conclusion I would draw from my materials is, that *Columbia* cannot, at least until the contrary is proved by evidence, be considered as a variety or form of *Cecropia.* With regard to the second eventuality, a hybrid form, of course it is as yet merely a conjecture. Still, as I feel myself bound to frankly express my opinion, I should say I believe it possible that *Columbia* may be a hybrid, perhaps of *Cecropia* and *Promethea,* and I will state what I believe to be in favor and disfavor of this conjecture. In favor would be the circumstance that it is very improbable that such a large species should occur so rarely, while the large number of Lepidopterologists eager to secure this treasure, operates against the idea that it was overlooked.

The conjecture that *Columbia* is a hybrid, would not be worth mentioning, if there did not exist similar cases recorded by the most prominent authorities. Of course I speak only of cases of hybrids as imagos or caterpillars, from which imagos, when bred, have been collected in the open fields. The facts just at hand (I have no doubt that more are published) record caterpillars of hybrids of Saturnia Carpini and Spini, found in Austria according to Lederer; caterpillars of Sphinx Epilobii, a hybrid of S. Vespertilio, and Euphorbiae, being found in France according to Rambur; in the same country are found also caterpillars of Sph. vespertilioides, the hybrid of S. vespertilio and S. Hippophaes according to Boisduval and Lederer.

The imago and caterpillars of *Sph. Phileuphorbiae,* hybrids of *Sph. Euphorbiae* and *Galii,* have been found near Berlin, in several specimens. Hybrids of *Zygaena Trifolii* and *Filipendulae* were found in the imago state in England, hybrids of *Colias Edusa* and *Hyale,* of *Lycaena Adonis* and *Alexis,* of *Hipparchia Arcania* and *Hero,* of *Coenonympha Pamphilus,* and *Iphis,* of *Vanessa Urticae* and *Atalanta* are recorded from different countries.

Artificially raised hybrids are recorded for *Smerinthus ocellatus* and *populi, Saturnia spini* and *Carpini, Saturnia spini* and *pyri Platypteryx falcula* and *curvatula, Dicranura vinula* and *erminea, Zygaena filipendulae* and *minos,* while numerous facts observed in the Garden of Acclimatization in Paris by Guerin with *Attacus Cynthia* and *Arrindia,* and other species of silk-worms, undoubtedly prove the possibility of inter-breeding among certain species of the genus Attacus. Mr. Riley, Rep. III, 170, succeeded in obtaining eggs from A. cynthia ♂ and Cecropia ♀, and from Cecropia ♂ and Polyphemus ♀, but the eggs did not hatch.

Comparing the hybrids known between vertebrates, and some occur not rarely, and even regularly, we find them mostly recorded between species reputed for their salacious habits, as between birds in the *Gallinae* and *Passeres,* between fishes in the *Cyprinoids.* Now every one will agree that the habit of the *Bombyces* is salacious in the highest degree.

There is perhaps another circumstance in favor of my conjecture. The hybrids of *Tetrao urogallus* and *tetrix,* known as *Tetrao intermedia,* occur notoriously always, when, by excessive hunting, the males of the first are killed in such a number, that the females are obliged to recur to the other species. Now it is not improbable that in times when some species of Attacus are extensively damaged by parasites—and I beg to remark that in the year Mr. Smith reared his specimens, all cocoons but three of *Columbia,* were most extensively attacked by parasites—the interbreeding would be much facilitated; I remarked also that, in the same year, Mr. Smith presented to the Museum a large lot of parasites bred from *Polyphemus,* and the year before of *Cecropia,* as proof that at least those species were largely infected.

The idea that new species may be formed by interbreeding is a very old one, even expressed by Fabricius in one of his first books, Philosophia Entomologica, by Gravenhorst in his celebrated work on Ichneumons, and by Westwood.

However it may eventuate, the conjecture that *Columbia* could be a hybrid species, seems to me at least worthy of consideration.

Concerning another new species, *Gloveri,* I cannot help thinking it to be identical with *Columbia,* to judge from the figure and description, as I have not seen the specimens. It is fair to state that Mr. Strecker, on seeing our specimens of *Columbia,* declared them to be different from his *Gloveri.*

Concerning the previous stages of *Columbia,* Mr. Bowles captured in August a full grown specimen, so closely resembling a *Cecropia* caterpillar in size and general appearance, that he did not take notes at the time, though on close examination he could not quite reconcile the color and arrangement of the tubercules with the description given by Morris. The principal difference was in the number of red warts, *Columbia* possessing more than the other species. The remains in our collection show the head, tail and the warts of the thoracical segments as in *Cecropia.* More is not to be seen. Another specimen has also the abdominal warts, but disconnected. The large chrysalis skin resembles *Cecropia.* The cocoon observed at Quebec by Mr. Couper, which from its likeness to that of *Cecropia,* he took to be that insect, produced in due time *Columbia.* This cocoon must have been different from all I have seen, which agree exactly with Mr. Smith's description. The cocoon of *Columbia* is much smaller and of more regular form; dark brown, approaching black in some places, with silvery spots; the inner and outer cocoon so closely woven together, except at the very top, as to be separated with difficulty.

It is fair to state and in disfavor of my above given opinion, that all the cocoons of *Columbia* are alike, and differ strongly from those from all other species, by the so-called silvery spots, and the dark blackish brown color of the cocoon. The silvery spots are produced by white silk woven around at certain intervals, but crowded together on the spots.

I draw attention to the fact that the cocoons of *Cecropia,* are themselves very variable in form and texture, and one presented by Mr. Smith from the same locality with *Columbia,* in certain ways approaches the cocoons of *Columbia.* The silk is the same, but less coarse and not silvery. I confess frankly that only the peculiar features of the cocoons support the opinion that *Columbia* is a different species.

Concerning the parasites of the large Attaci from New England, I know eight; one Dipteron, the *Exorista leucaniae* var. *cecropiae* bred by Mr. Trouvelot from *Polyphemus,* by Mr. Riley from *Cecropia;* the others all Hymenoptera. The large *Ophion macrurum,* has been bred from *Cecropia* by Mr. Riley and Mr. Altum, of Europe, from *Polyphemus* by Mr. Trouvelot, from *Promethea* by myself. In the museum collection I found cocoons, probably belonging to the southern species *splendidus,* also infected by the same *Ophion.*

Two species of *Cryptus* are, without doubt, the most common parasites, *C. nuncius* Say, and *C. Samiae* Packard; with the latter species *C. extrematis* Cress. is identical. The *C. nuncius* was bred from *Promethea* by Say, and in large numbers by myself; from *Polyphemus* in large numbers by Smith. The *C. Samiae* has been bred by Smith in large numbers from *Columbia,* and from *Cecropia* by Smith and Riley. The two species are very nearly related one to the other. The differences are given in a detailed manner by Mr. Riley (4 Rep., p. 111) upon comparing numerous specimens in conjunction with Mr. Cresson. I was fortunate enough to be able to compare a considerable number of types, and I am largely indebted to Mr. S. I. Smith for most of them, and notes concerning Mr. Cresson's views. I believe Mr. Riley is right in supposing that Say inadvertently overlooked the white apical spot on abdomen of *C. nuncius*, and since the same happened to Dr. Packard in the description of his species, I should add that among the more than two hundred specimens bred by myself, all, both male and female, possess the white apical spot, though it varies in the male. I saw no male bred from *Promethea*, without a white spot, but there are recorded some found by Mr. Riley. The color of the tarsi I observed to be a little more variable than stated by Mr. Riley, having bred a male *C. nuncius* with all the joints of the tarsi black above, and some males and females with the first joint entirely blackish. The very apparent white color of the four anterior coxae of the male, and the short ovipositor of the female, are the most prominent characters.

It is an interesting fact, that between the large number of *Cr. nuncius* bred by Mr. Smith from *Polyphemus*, not one male possesses a white apical spot on the abdomen. I have thirty-six males and females before me, and am not able to find any other difference between them and the parasites from *Promethea.*

The other species, *Cr. extrematis,** is described by Mr. Cresson (Sept. 1864, Proc. Ent. Soc. Philad., p. 304), and as *Cr. Samiae* by Dr. Packard (March, 1865, Proc. Bost. S. N. H., p. 346). The identity of both species, presumed by Mr. Riley (Rep. IV, p. 111), is now proved by numerous types before me. There were some difficulties to be overcome before I was able to be sure of my determination. That the male described as *C. extrematis* belongs to *C. nuncius* was recognized by Messrs. Cresson and Riley (Rep. IV, p. 110), but there were some discrepancies in Dr. Packard's description of *Cr. Samiae* pointed out by Mr. Riley, the misapplication of the terms "trochanters" for "coxae," and "coxae" for "trochanters," and the omission to mention the white apical spot of the abdomen of the female. As I have before me about twenty types of *C. Samiae,* together with the types with Dr. Packard's original label, all belonging to the parasites bred by Mr. Smith, and besides them a larger number taken by myself out of the cocoons kindly forwarded by Mr. Smith and all types of Dr. Packard, there can be no doubt that I have before me the right *Cr. Samiae.*

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* The name *C. extrematis* is not admissible on account of its incorrect formation.

All the specimens prove Mr. Riley's supposition correct, and that inadvertently the terms "coxae" and "trochanters" were misapplied. Farther, that the females seen by me have a conspicuous apical white spot. The Museum had sent, according to the wishes of Mr. Cresson, March 9, 1868, a lot of Ichneumonidae, and among them a large number of the specimens bred by Mr. Smith from *Cecropia, Polyphemus* and *Columbia,* and as these were returned named in Jan. 15, 1872, about the time of issue of Mr. Riley's Report on those parasites, I studied them carefully. There are twenty-six females and twenty-three males, all named *Cr. nuncius* by Mr. Cresson, but on comparing them, I found all females but two, even the label-bearing specimen, to be *Cr. extrematis,* and of the males eight *Cr. extrematis,* the others, including the label-bearing specimen, to be *Cr. nuncius,* but these all without the white apical spot of the abdomen, all being bred from *Polyphemus.* Of course there was some doubt if I knew at all the real *Cr. extrematis,* but I had seen a type sent by Mr. Smith, and named for him by Mr. Cresson in 1867, with the remark " *Cr. extrematis* Cresson is probably a variety of *Cr. nuncius* Say," and the note " that there had been no males of *Cr. extrematis* or females of *C. nuncius* in the collection sent for determination." Between a dozen specimens communicated by Mr. Smith to me, I find two males of *Cr. extrematis,* and two females of *Cr. nuncius,* removing my last doubts, and proving that Mr. Cresson had not been decided about the differences and limits of the two species.

There is also *Cr. extrematis,* identical with *Cr. Samiae,* parasite on *Cecropia* and *Columbia,* and *Cr. nuncius* parasite on *Promethea* and *Polyphemus,* for the latter species the males without the apical spot.

Of *Cr. Smithii* twenty-two specimens, male and female, are before me, two of them from Pennsylvania, all others bred by Mr. Smith. Of the specimens with certainty bred from *Columbia,* seven are before me, males and females, among them the types with the original labels of Dr. Packard. Fifteen specimens, including some of those bred from *Columbia* have been labelled by Mr. Cresson "*Hemiteles compactus* Cresson." I do not find this species published; the *Pezomachus compactus* Cresson is a different species. I see among Mr. Smith's types the *Cr. Smithii* also labelled by Mr. Cresson as *Hemiteles;* of course the name *H. Smithii* is to be retained. All specimens agree with Dr. Packard's description, except that most of the males have only the apical third of the tibiae of the hind legs blackish, and only one two-thirds as stated in the description; I find some of *H. Smithii* in the infected cocoons. They are situated between the cocoons of *Cr. Samiae,* but in an oblique position at variance with the regularity of the cocoons of *Cr. Samiae.* The cocoons are similar to those of *Cr. Samiae,* but shorter, nine mill. long, and apparently woven with a softer silk. The dried nympha, or the dead imago, is enclosed in an elongated somewhat flask-shaped bag, made of white and very soft silk, always open at the smaller end. I never found such bags in the cocoons of *Cr. Samiae* or *Cr. nuncius.* I found in the cocoons always *H. Smithii,* only in small numbers compared with the other species.

Between these cocoons I took out of a similar but smaller one, a broken specimen of a third species. It is a female Hemiteles, perhaps *H. sessilis* (Naturalist Canad. VI, p. 334), or nearly related. In some characters it is similar to *Hem. conspicuus* Cresson, but as the specimen consists only of fragments, I cannot go farther in my determination. The dark transversal bands on the fore wings, and smaller size, separate it directly from the above mentioned species.

I should remark that I possess larvae of *Cr. Samiae, Cr. nuncius* and *H. Smithii.* Some of the two first contain, as I believe, eggs of a parasite; perhaps Hemiteles preys upon them.

Chalcis Mariae, found on *Polyphemus* and *Cecropia,* is the only known parasite on the *Attaci* with which I am unacquainted, while I have myself observed a small species of *Bracon,* parasitic on *Promethea,* and possess specimens of it in the larval as well as in the perfect state.

XVII. Supplement to the List of North American Noctuidae

BY AUG. R. GROTE.

[*Read before this Society, January* 8, 1875.]

SINCE the publication of the List of North American Noctuidae, I have published descriptions of several additional species, chiefly in a paper presented to the Academy of Natural Sciences, Nov. 3d, 1874, printed copies of which were distributed Dec. 15th, 1874. More than ten days later there appeared a paper by Mr. H. K. Morrison, from the proceedings of the Boston Society of Natural History, describing and indicating a number of new species, a few of which had been previously submitted to me, while at least one described by myself in the paper above referred to appears under a new name. The facts attending the publication of the two papers accord to my own the priority. For nearly a year I had been in constant correspondence with Mr. Morrison and a large number of specimens of his were sent to me from time to time in boxes through the mail for identification. I performed the work voluntarily, without benefit to myself, and I was fortunate in being able to save Mr. Morrison much labor and a certain number of synonyms by my opinions on his material. I am duly rewarded for my complaisance by petulant and unnecessary remarks in this paper of Mr. Morrison's. I am told for instance on page 154, that "*E. coccineifascia* and *E. rosaba* [*i. e. rosalba*] are " figured very poorly by Mr. Grote," whereas *I* never figured the species at all, the plate in question being executed by Mr. Herman Strecker for the American Entomological Society.

I am also taken to task for the shortness of my description of *Dianthoecia leucogramma*, which Mr. Morrison pretends to be unable to be " fully satisfied " about. The description will, I think, compare very favorably in length, with any of Mr. Morrison's of his twenty-three new species of *Agrotis*, and I hope in clearness with any of Mr. Morrison's more lengthy compositions. I am happy in any case to notice the form of my descriptions of Noctuidae involuntarily commended by Mr. Morrison by its appropriation.

In describing *Pyrophila glabella*, Mr. Morrison makes the following remarks: "Three forms have been recently described as distinct in this genus, inornata *Grote*, conspersa *Riley*, and Agrotis repressus *Grote*, but they have turned out to be identical with our common *pyramidoides* Guen., and *tragopoginis* Linn. The first two are well marked varieties of *pyramidoides*; the last simply a description, under an erroneous generic reference, of American specimens of *tragopoginis* a well known European species," l. c. 153. Any one would suppose, after reading the above, that Mr. Morrison was recording some original observations of scientific value and that myself and Prof. Riley are to be corrected by him. The reverse is the case. The references of *inornata* Grote and of *conspersa* Riley to pyramidoides, were already made; the former by Prof. Riley; the latter by myself. I also am the first to correct my re-description of *tragopoginis*, and at his desire furnished Mr. Morrison himself with a specimen of this species, and this but "recently," before the publication of his paper. In the "List" these citations are correctly made and Mr. Morrison has drawn from thence his generic term *Pyrophila*, not previously used for our American species. There are two original mistakes in Mr. Morrison's remarks, however, that may be corrected. The first lies in the unscientific use of the word "variety" when writing of *conspersa*. The single specimen of *conspersa* is an "aberration" of *pyramidoides*, not a "variety." The second is in the use of the word "recent," as applied to the time of description of *inornata*, which is dated eleven years ago, in 1864. Geologically speaking that description is of course recent; in comparison with any of Mr. Morrison's compositions, it is, however, sufficiently remote.

I notice here the species of Mr. Morrison's which I have identified and which should be known under different names. *Copipanolis vernalis* Morr., p. 133, is a re-description of *Eutolype Rolandi* Grote. I do not consider the species as belonging to my genus *Copipanolis*. I have failed to observe the tibial claw until recently. Its possession allies the moth still more closely to *Dicopis* Grote. The three specimens sent me by Mr. Thaxter and Prof. C. V. Riley, had the legs so folded and concealed by the vestiture that it escaped my attention. The publication of any of the species discovered by Mr. Thaxter constitutes a distinct breach of scientific etiquette on the part of Mr. Morrison, who has acted in defiance of Mr. Thaxter's request that none of the specimens belonging to him should be described by Mr. Morrison who received them for inspection. *Mamestra illabefacta* Morr. is a redescription of *M. lilacina* Harvey. I am credited with pronouncing the two distinct, but I did so under limitation, the color of the specimens alone not quite agreeing. Dr. Harvey's type was brighter colored than the somewhat faded specimen sent me by Mr. Morrison as a new species of "*Taeniocampa*." Subsequently a specimen intermediate in tone has occurred and the two names undoubtedly refer to one and the same species. *Hydroecia semiaperta* Morr. is referred to *Perigrapha* on p. 150, in my opinion "erroneously." The *habitus* resembles *Hydroecia* (*Apamea*), and I regard the insect as intermediate between *Nephelodes* and *Apamea* and as the type of a distinct genus. *Glaea sericea*, p. 151, seems to be based on a specimen sent me as a *n. s.* of that genus, but which I could not satisfactorily separate from *G. apiata*. *Xanthoptera nigrocaput* Morr., p. 153, is, very apparently, a synonym of *X. Ridingsii* Riley. I also object to the disposition of the species of *Xanthoptera* and *Prothymia* made by Mr. Morrison on page 154. *Semicrocea*, *Ridingsii* and *fax*, belong together; *Semiflava* is related to *coccineifascia* and *rosalba*.

Hadena rasilis Morr., p. 158, is a synonym of *Elaphria grata* Hübn., referred to *Caradrina* in my List, perhaps "erroneously." It is a common Southern species, plentiful in Central Alabama. I am indebted to Prof. Snow for an opportunity of examining a ♀ specimen determined by Mr. Morrison as his species.

Although Mr. Morrison does not mention the circumstance, yet I sent him the California specimens described by him as *Agrotis exsertistigma*, determined as *A. alternata*, since I regard them as belonging to that species. The differential characters published by Mr. Morrison are not constant, and I cannot consider his species valid. In the same way I cannot separate the California specimens of an allied species, *A. clandestina*, from our own. From the description I think it not improbable that Mr. Morrison's new species of Hadena, *vulgivaga*, is identical with Guenée's *apamiformis*. Mr. Morrison will have re-described, with impartiality, species previously published by Hübner, Guenée, Prof. Riley, Dr. Harvey and myself.

I find reason also to seriously object to Mr. Morrison's notice of myself in connection with his new species, *A. rufipectus.* Mr. Morrison says: "Kindly sent to me by Mr. A. R. Grote for determination." I sent Mr. Morrison the specimen in response to his request that I should send him some new species of *Agrotis* for *description.* I myself determined this species as new and desired no determination from Mr. Morrison in the matter. With regard to Mr. Morrison's remarks concerning *M. lilacina* (p. 143), I confess I do not recognize the necessity that obliges Mr. Morrison to publish his descriptions of species already published on the plea that his descriptions were "written before." Finally, I deprecate the use of the word "erroneous" by a person so inexperienced as Mr. Morrison, and who has already made mistakes which will effectually prevent any belief in his infallibility; as applied to myself, this term comes with additional bad grace, since I shall have always deserved, under any subsequent circumstances, a certain amount of consideration at the hands of Mr. Morrison.

Of the other species described by Mr. Morrison I have seen only *Acronycta increta, Mamestra olivacea, Segetia fabrefacta* and *Pteroscia atrata,* and which appeared to me valid. With regard to one of Mr. Morrison's species, *Agrotis unimacula,* I have had some correspondence with him; I believe it to be entitled to a distinct name, although so very nearly related to the European *augur.* The name used by Mr. Morrison being preoccupied for a species of *Agrotis* from Andalusia by Dr. Staudinger, I propose to call our American species *A. haruspica.*

The wholesale appropriation and misapplication of Hübner's names by Treitschke has been more or less quietly acquiesced in by subsequent German Entomologists until quite recently. In France, the wrong appears to have been increased and the injury aggravated. Boisduval assisted at this partition of scientific property and wrote of "*mon genre*" at the expense of the Augsburg student. Guenée, whose description of species is so excellent, re-named Hübner's genera ad libitum and styled the Verzeichniss "un ouvrage mort né." In vitality the Verzeichniss compares favorably to-day with any other publication on its subject. In England, Hübner found a conscientious friend in Stephens, as early as 1825. Meanwhile the text-books of his fatherland placed the letters " Tr." or " Ochs." after such generic names as *Agrotis, Erastria, Diphthera, Graphiphora, Gortyna, Apatela, Xanthia, Cymatophora, Heliothis,* designations proposed by Hübner when European entomologists were for the most part far behind in any adequate comprehension of the classification of the Sub-order.

NOCTUAE *Linn.* (1788).

*DEMAS *Steph.* (1829).

Type: Bombyx coryli *Linn.*

† **versicolor** *Morr.*, Proc. B. S. N. H., 1874, 133. Massachusetts.

EUTOLYPE *Grote* (1874).

Type: Eutolype Rolandi *Grote.*

Rolandi *Grote*, Proc. Acad. Nat. Sci. Phil., 1874, 198; *Copipanolis vernalis*, Morr., Proc. B. S. N. H., 133. Massachusetts; Missouri.

[NOTE.—This genus may succeed *Dicopis*, in the " List."]

(Page 7.)

*DIPHTHERA *Hubner* (1806).

Type: Diphthera Aprilina† *Hubn.* (nec *Linn.*).

fallax *Herr.-Sch.*, Exot., S. 80, fig. 211.

[NOTE.—Hübner's *aprilina* is not Linné's species, but the *orion* of Esper. In 1806 Hübner gives his " *aprilina* " as the type of *Diphthera*, a name afterwards appropriated by Ochsenheimer. Guenée's " Bombyciformes," 1852, is an appropriation of Hübner's " Bombycoides," 1806, under another name. The term *Diphthera* must be restored to its original signification. For the European *Diphthera ludifica* Lederer ex Linn., I propose the term **Trichosea** and restrict *Moma* to the species *Moma Astur* Hübn. ex Cram.]

*APATELA *Hubner* (1806).

Type: Noctua Aceris *Linn.*

[NOTE.—This is Hübner's type in the Tentamen. I would refer all the forty-seven species, cited by me on pages 7 and 8 of the " List " under *Acronycta*, to APATELA; for the sake of brevity I omit here their separate designation. In case of a disintegration of the genus, *Acronycta* must be retained with its type *leporina*, as cited by me in the " List," and as restricted by Hübner in 1816, for certain of the species. I cite here the North American species of Apatela, which are not included in the " List " under *Acronycta.*]

exilis (*Grote*), Proc. Acad. N. S. Phil., 1874, 197 (*Acronycta*).
paupercula (*Grote*), Proc. Acad. N. S. Phil., 1874, 197 (*Acronycta*).
subochrea (*Grote*), Bull. Buff. S. N. S., 2, 153 (*Acronycta*).
quadrata (*Grote*), Bull. Buff. S. N. S., 2, 154 (*Acronycta*).
americana *Harris*, 3d Ed. Ins. Inj. Veg. Mass., 436, figs. 216, 217; *Phalaena aceris* ‡ (larva) Abb. & Sm., Pl. 93; *Acronycta hastulifera* ‡ Guen., Noct. 1, 47 (imago and larva); ? *Phalaena hastulifera* Abb. & Sm., Pl. 92 (imago).
† **acericola** (*Guen.*), Noct. 1, 48 (imago); *Phalaena aceris* ‡ Abb. & Sm., Pl. 93 (imago); *Phalaena hastulifera* Abb. & Sm. (larva teste Guenée).

[NOTE.—These last two citations should replace those on page 7, lines 27, 28 and 30 of the "List."]

increta (*Morr.*), Proc. Bost. S. N. H., 1874, 131 (*Acronycta*).
† **aspera** (*Morr.*), l. c., 132 (*Acronycta*).

(Page 9.)

*AGROTIS *Hubn.* (1806).

Normanianus *Grote*, Trans. Am. Ent. Soc. (Sept. 1874).

[NOTE.—This citation must replace that of *triangulum*, line 22.]

attentus *Grote*, Can. Ent., 6, p. 131.
perattentus *Grote*, Can. Ent., 6, p. 131.
messoria *Harris*, Ins. Inj. Veg. Mass., 3d Ed. p. 444; *Agr. Cochrani* Riley, 1st Mo. Rep. 75; *Agr. repentis* G. & R., Trans. Am. Ent. Soc. 1, 350, Pl. 7, fig. 58; *Agr. lycarum* ‡ Grote, List, p. 10 (Calif.).

[NOTE.—This citation replaces the names cited in the List, p. 9, line 1, p. 10, lines 6, 7 and 13.]

fuscigerus *Grote*, Can. Ent., 6, 155.
Hollemani *Grote*, Can. Ent., 6, 156.
innotabilis *Grote*, Proc. Acad. N. S. Phil., 1874, p. 202.
euroides *Grote*, Proc. Acad. N. S. Phil., 1874, p. 202.
Bostoniensis *Grote*, Proc. Acad. N. S. Phil., 1874, p. 203.
† **hyperborea** *Zett.*; Mösch., Stett. Ent. Zeit., 1874, 317.
† **fusca** *Boisd.*; Mösch., W. E. M., 8, 197; *septentrionalis* Mösch., W. E. M., 6, 133, Tab. 1, fig. 3.

[NOTE.—This replaces the two separate citations in the "List." Möschler also conjectures that Okakensis *Pack.*, is identical with Wockei *Mösch.* I know neither species.]

† **Erdmanni** *Mösch.*, Stett. Ent. Zeit., 1874.
haruspica *Grote*; *Agr. unimacula* (nom. praeoc.) Morr., Proc. Bost. S. N. H., 1874, 166.

[NOTE.—This citation should replace that of *Augur* in the "List."]

(Page 12.)

*EUROIS *Hubn.*

[illegible] *Morr.*, Proc. Bost. S. N. H., 135.
[illegible] *Grote*, Trans. Am. Ent. Soc. Sept., 1874.

*MAMESTRA *Ochs.*

lilacina *Harvey*, h. s., 2, 112; *Mamestra illabefacta* Morr., Proc. Bost. Soc. N. H., 141.

†**impolita** *Morr.*, l. c., 140.

olivacea *Morr.*, l. c., 143.

†**incincta** *Morr.*, l. c., 156.

(Page 13.)

*DIANTHOECIA *Boisd.*

pensilis *Grote*, Proc. Acad. Nat. Sci. Phil., 1874, 199.

[NOTE.—My types were from Victoria, collected by the late Mr. Crotch. The species has been also sent me from Sauzalito by Mr. Behrens; the Californian specimens had the ground color of the wing more broken up with reddish, recalling *D. meditata.*]

†**modesta** *Morr.*, Proc. Bost. Soc. N. H., 144.

(Page 14.)

*POLIA *Hubn.* (1806).

†**perquiritata** *Morr.*, Proc. Bost. Soc. N. H., 136.

†**speciosa** ‡ *Morr.*, Proc. Bost. Soc. N. H., 137.

†**confragosa** *Morr.*, l. c., 138.

*HADENA *Schrank.*

***lateritia** (*Hufn.*); *Mamestra dubitans*, C. B. M., Noct., 232.

[NOTE.—Mr. Meske has sent me a specimen with the information that Dr. Speyer considers our species identical with the European.]

sputatrix *Grote*; *Had. sputator* Grote, List, p. 15, line 13.

congermana *Morr.*, Can. Ent., 6, 106.

delicata *Grote*, Trans. Am. Ent. Soc., Sept., 1874.

flava *Grote*, Trans. Am. Ent. Soc., Sept., 1874.

†***oculea** (*Linn.*); Wallengren, W. E. M., 7, 75 (California).

versicolor *Grote*, Proc. Acad. Nat. Sci. Phil., 1874, 204.

tracta *Grote*, Proc. Acad. Nat. Sci. Phil., 1874, 204.

†**vulgivaga** *Morr.*, Proc. Bost. Soc. N. H., 144.

HOMOHADENA *Grote.*

kappa *Grote*, Trans. Am. Ent. Soc., Sept., 1874.

†**retroversa** *Morr.*, Proc. Bost. Soc. N. Hist., 157.

(Page 18.)

TRICHOLITA *Grote.*

Type: Hydroecia semiaperta *Morr.*

semiaperta (*Morr.*), Can. Ent. 6, 105 (*Hydroecia*).

*GORTYNA *Hubn.* (1806).

Type: Noctua micacea *Esper.*

S. g. *APAMEA *Ochs.* (1816).

Type: Noctua nictitans *Linn.*

purpuripennis *Grote*, Proc. Acad. N. Sci. Phil., 1874, p. 206.
sera (*G. & R.*), Trans. Am. Ent. Soc. Phil., 1, 345, Pl. 7, fig. 55 (*Hydroecia*); Grote Proc. Acad. N. S. Phil., 1874, p. 206 (*Apamea*).
† **Salicarum** (*Barnston*), C. B. M. Noct., 717 (*Hydroecia*).
* **nictitans** (*Linn.*); Guen. Noct. 1, p. 127 (*Hydroecia*).
var. erythrostigma (*Haworth*).

S. g. *GORTYNA *Hubn.* (1806).

Type: Noctua micacea *Esper.*

inquaesita *G. & R.*, Trans. Am. Ent. S., 1, 344.

[NOTE.—From Massachusetts, Prof. Peabody, Mr. Thaxter; sometimes the spots are partly white on primaries.]

purpurifascia *G. & R.*, Trans. Am. Ent. Soc., 1, 341.

[NOTE.—From Massachusetts, Mr. Thaxter, No. 962; the species has no clypeal horn, and my former reference of this species as congeneric with the European *flavago*, is based on an erroneous identification of the Californian species as identical with *purpurifascia* G. & R.]

cerussata *Grote*, Proc. Ent. Soc. Phil., 2, 431, Pl. 9, fig. 1.
limpida *Guen.*, Noct. 1, p. 124.

[NOTE.—I have been too hasty in considering the above two species as synonymous. I have now a species which agrees with Guenée's description in wanting the basal white marks on primaries, and is smaller and more red than *cerussata*.]

cerina *Grote*, Proc. Acad. N. S. Phil., 1874, p. 200.

(Page 19.)

*OCHRIA *Hubn.* (1816).

Type: Noctua flavago *Linn.*

sauzalitae *Grote; purpurifascia* ‡ Grote (nec *G. & R.*) Bull. Buff. Soc. N. S., 1, 142. California.

[NOTE.—The Californian species (Mr. Edwards, No. 137, Mr. Behrens, No. 161, Sept. 17) differs generically by the distinct clypeal tubercle, and is the only American species known to me that is to be referred to *Gortyna* of Lederer (*Ochria* Hübner). The Californian species resembles *purpurifascia*, for which I have formerly mistaken it in the "List," but differs by the t. p.

line being less rigid and somewhat outwardly bent opposite the cell. No specimens of *purpurifascia* were accessible to me on the occasion of my first determination. The spots are variably white or yellow. The species may be easily separated on its structural characters. It is another instance of special resemblance between the Californian and European faunae.]

(Page 21.)

PTEROSCIA *Morr.*

Type: Pteroscia atrata *Morr.*

atrata *Morr.*, Proc. Bost. Soc. N. H., 156.

[NOTE.—I regard the genus as related to Ufeus *Grote.*]

(Page 22.)

* SEGETIA *Boisd.*

† **fidicularia** *Morr.*, Proc. Bost. S. N. H., 145. New York.
(?) **fabrefacta** *Morr.*, l. c., 146. Eastern States to Alabama.

* PYROPHILA *Hubn.*

† **glabella** *Morr.*, Proc. Bost. Soc. N. H., 153.

(Page 23.)

* GRAPHIPHORA *Hubn.* (1806).

Type: Noctua gothica *Linn.*

capsella (*Grote*), Proc. Acad. N. Sci. Phil., 1874, p. 201 (*Taeniocampa*).
oviduca (*Guen.*), Noct. 1, 357 (*Taeniocampa*).
† **styracis** (*Guen.*), Noct. 1, 357 (*Taeniocampa*).
† **hibisci** (*Guen.*), Noct. 1, 357 (*Taeniocampa*).
* **incerta** (*Hufn.*); *Taen. alia* Guen., Noct. 1, 354; *instabilis* Fitch, Trans. N. Y. Agr. Soc., 16, 343.
pacifica (*Harvey*), Bull. Buff. Soc. N. S., 2, 120 (Calif.; an spec. praec.?).
† **modifica** (*Morr.*), Proc. Bost. S. N. Hist., 150 (*Taeniocampa*).
† **intractata** (*Morr.*), l. c., 160 (*Taeniocampa*).
† **confluens** (*Morr.*), l. c., 159 (*Taeniocampa*).
† **earina** (*Morr.*), l. c., 158 (*Taeniocampa*).

[NOTE.—This genus must replace " *Taeniocampa* " in the List.]

PSEUDORTHOSIA *Grote* (1874).

Type: Ps. variabilis *Grote.*

variabilis *Grote*, Bull. Buff. S. N. S., 2, 161; Proc. Acad. N. S. Phil., 1874, 207. California.
pectinata *Grote*, Proc. Acad. N. S. Phil., 1874, 207. Colorado Territory.

HIMELLA *Grote* (1874).

Type: Himella fidelis *Grote.*

fidelis *Grote*, Proc. Acad. N. S. Phil., 1874, 201. New York.
furfurata *Grote*, Proc. Acad. N. S. Phil., 1874, 201. New York; California.

(Page 25.)

*ORTHOSIA *Ochs.*

† **minuscula** *Morr.*, Proc. Bost. Soc. N. H., 147.
† **baliola** *Morr.*, l. c., p. 148.
† **Belangeri** *Morr.*, l. c., p. 149.

*GLAEA *Hubn.*

† **pastillicans** *Morr.*, l. c., 151.

(Page 26.)

*SCOPELOSOMA *Curtis.*

devia *Grote*, Proc. Acad. Nat. Sci. Phil., 1874, 209.
† **napaea** *Morr.*, Proc. Bost. Soc. N. H., 152.

(Page 27.)

*CALOCAMPA *Steph.*

Type: Axylia vetusta *Hubn.*

nupera *Lintn.*, Bull. Buff. S. N. S., 2, 188.
cineritia *Grote*, Proc. Acad. N. Sci. Phil., 1874, 210.
curvimacula *Morr.*, Bull. Buff. S. N. S., 2, 191. Canada, Eastern and Middle States.

*LITHOMIA *Hubn.* (1816).

Type: Lithomia solidaginis *Hubn.*

germana (*Morr.*), Bul. Buff. S. N. S., 2, 192 (*Calocampa*); *Grote*, l. c., 198 (*Lithomia*). Eastern States; New York.

[NOTE.—These two genera and four species must replace the two European species erroneously cited as North American on page 27 of the "List" under "*Calocampa.*"]

(Page 28.)

*CUCULLIA *Schrank.*

serraticornis *Lintn.*, 26 Ann. Rep. N. Y. State Cab., 174; *C. matricariae* Behr. in Streck. Lep.

[NOTE.—The descriptions of Noctuidae in Mr. Strecker's publication, are totally irrecognizable when unaccompanied by Plates. No structural or important specific characters are given, while no dependence can be placed on the generic references in cases at all difficult. The present identification has been made by Mr. Lintner on a comparison with Mr. Strecker's specimen.]

(Page 30.)

*PLUSIA *Hubn.* (1806).

Type: Noctua chrysitis *Linn.*

epigaea *Grote*, Proc. Acad. Nat. Sci. Phil., 1874, 208.
labrosa *Grote*, Proc. Acad. Nat. Sci. Phil., 1874, 207.
† ***devergens** (*Hubn.*); Mösch., Stett. Ent. Zeit., 1874, 317.

(Page 31.)

*ANARTA *Ochs.* (1816).

† **Zetterstedtii** (*Staud.*); Mösch., Stett. Ent. Zeit., 1874, 317.

(Page 35.)

*PYRRHIA *Hubn.*

angulata *Grote*, Trans. Am. Ent. Soc. (Sept., 1874).
illiterata *Grote*, Proc. Acad. N. Sci. Phil., 1874, 211.

TAMILA *Guen.*

tertia *Grote*, Proc. Acad. Nat. Sci. Phil., 1874, 212.

[NOTE.—To this genus both *Tricopis* and *Euleucyptera* are strongly related, and they should perhaps not be separated from it. From *Heliothis* and *Melicleptria*, the three genera differ by the admixture of flattened scales on the thorax. *Heliothis*, as used in the "List," wants the extruded oviduct. I have recently been able to examine a specimen of *E. cumatilis*, through the kindness of Prof. Snow. From my figure the specimen merely differed by an increased size and the obsolescence of the discal spots above. The short fore tibiae have a stout, rather short and blunt claw on the inside, and *two* only on the outside, not a decreasing series as in *Tricopis*. The shape of the wings resembles *Tricopis*. My original description giving unarmed fore tibiae to *Euleucyptera*, must be corrected.]

[NOTE.—The following is an attempt, with the scanty material at my disposal, to classify the North American species allied to *Heliothis*.

Thoracic vestiture composed of flattened scales sparsely mixed with hair, 1.

Thoracic vestiture entirely hairy, 2.

1. Fore wings pointed at apices, with full costal edge; fore tibiae with a row of three stout, outer claws, and a longer inner terminal claw; eyes full; tibiae spinose; fore wings satiny white, divided medially by a honey-brown fascia.. **Tricopis chrysellus** *Grote*.

Fore wings produced at apices, with straight or slightly depressed costa; fore tibiae with two outer subequal stout, rather short claws, and a longer inner terminal one; eyes full; tibiae spinose; fore wings with satiny white median space, defined by the median lines...**Euleucyptera cumatilis** *Grote.*

Fore wings produced at apices, with straight or slightly depressed costa; fore tibiae with a row of three stout outer and a longer inner terminal claw; eyes full; tibiae spinose; fore wings white, not satiny, with brown and greenish shadings, and the usual lines and spots, somewhat like the ornamentation of *Tarache*..........**Tamila,** with three species, **nundina, Meadi, and tertia.**

2. Fore wings with depressed costa and produced apices, purple with an oblique central ocher shade; hind wings black; eyes constricted; fore tibiae with a longer inner terminal claw, double at base, and a single shorter outer claw; middle and hind tibiae spinose; size small; very hirsute......
Heliolonche modicella *Grote.*

Differs from the preceding in the fuller eyes. The fore tibiae have two long subequal inner claws, and a series of three outer claws or stout spines. Fore wings ocher, with oblique shades; hind wings black......
Heliophana mitis *Grote.*

Differs from the preceding by the fore wings being more widened outwardly, and by the inner claw to the fore tibiae being single. Fore wings pale clay color with two vinous purple lines, the inner arcuate, the outer sub-sinuate. Basal and terminal spaces somewhat olivaceous, as is the thorax and head. Costa shaded with vinous purple as are the fringes. Hind wings black with a broad white band. Abdomen black, pale at tip. Beneath pale with blackish shades at the base and before internal angles of the wings. *Expanse*, 14 mm.; California.....................................**Heliosea pictipennis** n. s.

Differs from the preceding by the wider fore wings, in shape more like the succeeding genus. Eyes constricted. Fore tibiae with a longer inner and two outer claws. Middle and hind tibiae spinose. Primaries stained with brilliant purple with blue shaded median lines......
Adonisea pulchripennis *Grote.*

The eyes are full. The fore wings of the usual shape crossed by two more or less evident median lines. The fore tibiae have a series of three outer claws or spines, a single inner longer terminal claw, succeeded by a row of slender spines. The species are numerous, and I refer them all to **Lygranthoecia** *G. & R.* They are **bina, lynx, brevis, atrites, arcifera, Spraguei, Packardi, mortua, jaguarina, marginata, Thoreaui, saturata.**

The eyes constricted. The fore tibiae without claws, but with terminal spines. Wings wide; hind wings without maculation......
Melaporphyria immortua *Grote.*

The remaining species in my List are left under **Melicleptria,** and temporarily regarded as congeneric with the European **M. cardui.** The material at my present disposal is insufficient to determine the matter. The species are Western. One (*tuberculum*) I do not know at all; of another (*celeris*), I have seen but one specimen which cannot, I believe, remain associated with the rest. *Spinosae* should be referred back to **Heliothis,** which wants the claws of *Lygranthoecia* and the other genera, and has the ovipositor concealed.]

(Page 37.)

*EUSTROTIA *Hubn.*

obaurata *Morr.*, Proc. Bost. Soc. N. H., 154.

*PROTHYMIA *Hubn.* (1816).

Type: Prothymia aenea *Hubn.* non *S. V.*

semiflava (*Guen.*), Noct. 2, p. 241 (*Xanthoptera*).
coccineifascia (*Grote*), Trans. Am. Ent. Soc. 4, 294, Pl. 1, fig. 89 (*Xanthoptera*); Morr., Proc. Bost. Soc. N. Hist., 154 (*Prothymia*).
rosalba (*Grote*), l. c., 295, Pl. 1, fig. 88 (*Xanthoptera*).

XANTHOPTERA *Guen.*

Type: Xanth. nigrofimbria *Guen.*

nigrofimbria *Guen.*, Noct. 2, 241, Pl. 10, fig. 12.

EXYRA *Grote* (1875).

Type: Xanthoptera semicrocea *Guen.*

semicrocea (*Guen.*), Noct. 2, 241 (*Xanthoptera*).
Ridingsii (*Riley*), Trans. St. Louis Acad. Nat. Sci., 1874, 240 (*Xanthoptera*); *Xanth. nigrocaput* Morr., Proc. Bost. Soc. N. H., 152.
fax (*Grote*), Trans. Am. Ent. Soc. 4, 295.

(Page 39.)

PSEUDOLIMACODES *Grote* (1874).

Type: Ps. niveicostatus *Grote.*

niveicostatus *Grote*, Stett. Ent. Zeit., Proc. Acad. N. S. Phil., 1874, 212. New York; Massachusetts.

(Page 41.)

*CATOCALA *Schrank.*

communis *Grote*; *C. neogama* ‡ Guen., Noct. 3, 96.
neogama (*Abb. & Sm.*), Ins. Ga., 88 (*Phalaena*).

[NOTE.—Specimens recently received from Texas have brigher yellow hind wings, as figured by Abbot. The northern species has them of a buff yellow, as described by Guenée who notices the difference.]

Aholibah *Strecker*, Lep., Pl. 9, fig. 5.

[NOTE.—California; appears nearly allied to *C. marmorata*.]

simulatilis *Grote*, Trans. Am. Ent. Soc. (Sept., 1874).

[NOTE.—Ohio; allied to *C. obscura*.]

Levettei *Grote*, Trans. Am. Ent. Soc. (Sept., 1874); *C. Judith* Streck., Lep., Plate 11, fig. 5.

[NOTE.—Indiana; allied to *C. Robinsoni*.]

adoptiva *Grote*, Trans. Am. Ent. Soc.; *C. Delilah* Strecker, Pl. 11, fig. 7.

[NOTE.—Texas; allied to *C. innubens*.]

coelebs *Grote*, Trans. Am. Ent. Soc., Sept,, 1874.

[NOTE.—Canada; allied to *C. consors*.]

Anna *Grote*, Trans. Am. Ent. Soc. (Sept., 1874); *C. Amestris* Strecker, Pl. 11, fig. 6.
{ **Sappho** *Streck.*, Plate 11, fig. 4 [Texas].
{ **Agrippina** *Streck.*, Plate 11, figs. 1–3.

[NOTE.—Texas; apparently near *lachrymosa*.]

{ **Aholah** *Streck.*, Plate 11, fig. 8.

[NOTE.—Texas; this if distinct and not *C. formula*, would be the species figured on the same Plate with *Amasia*, as the female, in Abbot and Smith.]

[NOTE.—The earliest date on which I can find that any copy of Mr. Strecker's Number 11 was received, is Nov. 12, 1874. His date of "August" can have no relation in fact to a question of priority.]

illecta *Walk.*, C. B. M., 203; Grote, Catoc. N. Am. No. 37, p. 13; *C. Magdalena* Strecker, Plate 11, fig. 9.
nuptialis *Walk.*, C. B. M., 1206; *C. Myrrha* Streck., Plate 11, fig. 12.

[NOTE.—This is a south-western species which I have received also from Missouri. *C. abbreviatella* may be a form of this species; *C. nuptialis* (*Myrrha* Streck.) differs by the reniform which is "black, curved, subpyriform," as Mr Walker describes it, while annulate with a black dot inferiorly in *abbreviatella*. There appear to be also other differences in the form of the transverse lines. I have not yet had an opportunity of re-examining my types in Coll. Am. Ent. Soc. Mr. Dodge's *C. Whitneyi* is a distinct but allied species. It is unfortunate that Mr Strecker should republish two "old" species under new names.]

Whitneyi *Dodge*, Can. Ent., 6, 125.
• **Mariana** *Hy. Edw.*, Streck., No. 11, p. 98 (Vancouver).
• **Hippolyta** *Hy. Edw.*, Streck., No. 11, p. 98 (California).
• **Cleopatra** *Hy. Edw.*, Streck., No. 11, p. 98 (California).
• **Luciana** *Hy. Edw.*, Streck., No. 11, p. 98 (Colorado).
Perdita *Hy. Edw.*, Streck., No. 11, p. [illegible] (California; *nubilata* ?).
[illegible] *Streck.*, Plate 11, fig. 10 (Texas; [illegible]).

[NOTE.—In my last list (Trans. Am. Ent. Soc., 1874) I enumerated seventy-three North American species of Catocala. The number now is apparently eighty-three.]

(Page 46.)

HOMOPYRALIS *Grote* (1874).

Type: Hom. tactus *Grote.*

tactus *Grote,* Proc. Acad. N. S. Phil., 1874, 213.
tantillus *Grote,* l. c., 214.

(Page 49.)

* SALIA *Hubn.* (1806).

Type: Pyralis salicalis *W. V.*

interpuncta (*Grote*), Trans. Am. Ent. Soc. 4, pp. 93 and 309 (*Madopa* and *Colobochila*); *Col. saligna* Zell. Verh. Z.-b. G., S. 462. Southern States.

[NOTE.—This genus should replace "*Colobochila*" in the "List."]

ERRATUM.

Page 211, line 28, for "Prof. Snow" read "Prof. S. H. Peabody."

XVIII. Check List of North American Sphinges

BY A. R. GROTE.

[*Read before this Society, January* 8, 1875.]

SPHINGES Linn. restr.

CAUDIBERBES Borkh.

HEMARIS *Dalm.*

1. **Thetis** (*Boisd.*) *Grote.* California.
2. **palpalis** *Grote.*[1] California.
3. **tenuis** *Grote.* New York; Ohio; Wisconsin.
   Macroglossa fumosa Strecker.
4. **diffinis** (*Boisd.*) *Grote.* Canada; New York; Massachusetts.
5. **marginalis** *Grote.* Michigan; Ohio; Indiana.
6. **axillaris** (*G. & R.*) *Grote.* Texas.

HAEMORRHAGIA *G. & R.*

7. **gracilis** *G. & R.* New York; Massachusetts.
8. **Buffaloensis** *G. & R.* New York.
9. **uniformis** (*G. & R.*) *Grote.* Anticosti; New York.
10. **Floridensis** *G. & R.* Florida.
11. **Thysbe** (*Fabr.*) *G. & R.* Massachusetts; New York; Pennsylvania.
    Sphinx pelasgus Cramer.
    ? *Sesia cimbiciformis* Stephens.
    ? *Sesia ruficaudis* Kirby.
12. ? **fuscicaudis** (*Walk.*) *G. & R.* Georgia.

AELLOPOS Hubn.

13. **Titan** (*Cram.*) *Hubn.* Ohio; New York; Massachusetts; Texas.
    Macroglossum annulosum Swains.
    Macroglossa balteata Kirtl.
14. **Tantalus** (*Linn.*) *Hubn.* Texas.
    Sphinx zonata Drury.

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[1] Regarding this species Mr. Hy. Edwards writes me: "The specimen marked "Gilroy," collected by Mr. Crotch, was not taken in British Columbia, but at Gilroy, Santa Clara County, California, about 80 miles south of San Francisco. I remember the specimen perfectly, and told Crotch that it was a new species. I think I have a species not yet noticed. Your palpalis is undoubtedly distinct."

EUPROSERPINUS *G. & R.*

15. **Phaeton** *G. & R.* California.
Macroglossa Erato Boisd.

ARCTONOTUS *Boisd.*

16. **lucidus** *Boisd.* California.

LEPISESIA *Grote.*

17. **flavofasciata** (*Barnst.*) *Grote.* Canada.

PROSERPINUS *Hübn.*

18. **Clarkiae** (*Boisd.*) *Clem.* California.
Lepisesia Victoria Grote.[1]
19. **Gaurae** (*Abb. & Sm.*) *Clem.* Georgia.

AMPHION *Hübn.*

20. **Nessus** (*Cram.*) *Hübn.* New York; Canada; Mass.; Penn.

THYREUS *Swains.*

21. **Abbotii** *Swains.* Massachusetts; New York; Pennsylvania.

ENYO *Hübn.*

22. **lugubris** (*Linn.*) *Walk.* Georgia; Alabama; Texas.

DEIDAMIA *Clem.*

23. **inscripta** (*Harr.*) *Clem.* Massachusetts; New York; Pennsylvania.

EUMORPHAE *Hübn.*

HYLES *Hübn.*

24. **Chamaenerii** (*Harr.*) *Grote.* Canada; Massachusetts; Pennsylvania.
Sphinx epilobii Harr.
Deilephila galii ‡ Walk.
? *Deilephila intermedia* Kirby.
? *Deilephila oxybaphi* Clem.

DEILEPHILA *Ochs.*

25. **lineata** (*Fabr.*) *Harr.* Canada; California; Mass.; Georgia; Texas.
Sphinx daucus Cram.

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[1] From a fresh specimen received from Mr. Hy. Edwards I find that my description is based on a faded specimen of this species. I believe our two N. American species to differ generically by the shorter body parts and non-excavate wings.

DUPO *Hübn.*

26. **Vitis**[3] (*Linn.*) *Grote.* Massachusetts; Pennsylvania; Southern States.
Sphinx fasciatus Sulzer.
Dupo jussieuae Hübn.
27. **Linnei** (*G. & R.*) *Grote.* Alabama.
Sphinx vitis ‡ Cram. (268*E*).

PHILAMPELUS *Harr.*

28. **Pandorus** (*Hübn.*) *Walk.* Massachusetts; New York; Pennsylvania.
Phil. satellitia ‡ Harr.
Phil. ampelophaga Boisd.
29. **Achemon** (*Drury*) *Harr.* Mass.; New York; Penn.; Southern States.
Sphinx Crantor Cram.

ARGEUS *Hübn.*

30. **Labruscae** (*Linn.*) *Hübn.* New Jersey; Missouri.

PACHYLIA *Walk.*

31. **Ficus** (*Linn.*) *Walk.* Key West, Florida.
32. † **Lyncea** *Clem.* Texas.

METOPSILUS *Dunc.*

33. **Tersa** (*Linn.*) *Dunc.* Canada to Texas.
34. † **Procne** (*Clem.*) California.

DARAPSA *Walk.*

35. **Choerilus** (*Cram.*) *Walk.* Mass.; Kansas; New York; Southern States.
Sphinx Azaleae Abb. & Sm.
36. **versicolor** (*Harr.*) *Clem.* Massachusetts; New York; Ohio.
37. **Myron** (*Cram.*) *Walk.* Canada; New York; Mass.; Southern States.
Sphinx pampinatrix Abb. & Sm.
var. **Cnotus** (*Hübn.*). Southern States.

PHALAENOIDES *Borkh.*

PAONIAS *Hübn.*

38. **excaecatus** (*Abb. & Sm.*) *Hübn.* Canada; Mass.; New York; S. States.
Paonias pavoninus Geyer.
39. **Myops** (*Abb. & Sm.*) *Hübn.* New York; Mass.; Southern States.
Smerinthus rosacaearum Boisd.

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[3] In his description of *vitis* Linné refers to Merian Ins. Sur., Tab. 47. On this plate the top figure (the male according to Merian) in the colored copies has the terminal band pink on the hind wings, and this is decisive as to what species is intended, and obviates any necessity for criticism on Linné's diagnosis. The lower figure neither represents *vitis* nor *Linnei*, but probably *satellitia*.

CALASYMBOLUS *Grote.*

40. **Astylus** (*Drury*) *Grote.* Massachusetts; New York; Pennsylvania.

Sphinx Io Boisd.

Smerinthus integerrima Harr.

SMERINTHUS *Latr.*

41. **ophthalmicus** *Boisd.* California.

42. **geminatus** *Say.* Canada; Massachusetts; New York; Pennsylvania.

43. **Cerisii** *Kirby.* Hudson Bay Territory.

AMORPHA *Hübn.*

44. **modesta** (*Harr.*) *Grote.* Canada; Massachusetts; New York.

Smerinthus princeps[4] Walk.

CRESSONIA *G. & R.*

45. **juglandis** (*Abb. & Sm.*) *G. & R.* Canada to Southern States.

Smerinthus pallens Strecker.

MANDUCAE *Hübn.*

CERATOMIA *Harr.*

46. **Amyntor** (*Hübn.*) *G. & R.* Canada; Mass.; Penn.; Mich.

Ceratomia quadricornis Harr.

47. **Hageni** *Grote.* Texas.

DAREMMA *Walk.*

48. **undulosa** *Walk.* Connecticut; Massachusetts; New York; Penn.

Sphinx Brontes ‡ Boisd.

Ceratomia repentinus Clem.

DILUDIA *G. & R.*

49. **Jasminearum** (*Boisd.*) *G. & R.* New York; Pennsylvania.

50. † **leucophaeata** *Clem.* Texas.

AMPHONYX *Poey.*

51. **Antaeus** (*Drury*) *Poey.* Key West, Florida.

MACROSILA *Walk.*

52. **rustica** (*Fabr.*) *Walk.* Pennsylvania; Virginia; Southern States.

53. **Carolina** (*Linn.*) *Clem.* Massachusetts to Cuba.

54. **quinquemaculata** (*Haw.*) *Clem.* Canada to Middle States.

Phlegothontes Celeus Hübn.

55. **cingulata** (*Fabr.*) *Clem.* New York to Cuba.

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[4] Amorpha *Hübn.*, 1806, has priority for this genus, of which the type is the European *A. populi.* Fabricius' *modesta*, Ent. Syst., 356, No. 4, appears to be a re-description of Timesius *Stoll.*

SPHINX[5] *Linn.*

56. **Drupiferarum** *Abb. & Sm.* Canada to Southern States.
57. **Kalmiae** *Abb. & Sm.* Canada to Southern States.
58. **Chersis** (*Hübn.*) *G. & R.* Canada to Pennsylvania.
Sphinx cinerea Harr.
59. † **perelegans** *Hy. Edw.* California.
60. † **oreodaphne** *Hy. Edw.* California.
61. † **Vancouverensis** *Hy. Edw.* California.

LETHIA *Hübn.*

62. **Gordius** (*Cram.*) *Hübn.* Canada; New York; Pennsylvania.
63. **Inscitiosa** (*Clem.*) *Grote.* Massachusetts; New York; Wisconsin.

AGRIUS *Hübn.*

64. **eremitus** *Hübn.* Massachusetts; New York; Wisconsin.
Sphinx poecilia Steph.
Sphinx sordida Harr.
65. **lugens** *Walk.* Missouri; Arizona; Texas.
Sphinx eremitoides Strecker.

DOLBA *Walk.*

66. **Hylaeus** (*Drury*) *Walk.* Mass.; Missouri; Ohio; Southern States.

DILOPHONOTA *Burm.*

67. **Ello** (*Linn.*) *Burm.* New York; Pennsylvania; Southern States.
68. **obscura** (*Fabr.*) *G. & R.* Pennsylvania.

HYLOICUS *Hübn.*

69. **plebeius** (*Fabr.*) *Grote.* Massachusetts; New York; Pennsylvania.
70. † **Sequoiae** (*Boisd.*). California.
71. † **Strobi** (*Boisd.*). California.?

LAPARA *Walk.*

72. **Coniferarum** (*Abb. & Sm.*) Southern States.
73. **bombycoides** *Walk.* Canada; Massachusetts; New York.
Ellema Harrisii Clem.
74. **Pineum** (*Lintn.*). New York.[6]

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[5] According to Borkhausen, Rösel first applied this name to the larva of the type of the genus, the European *Sphinx ligustri*.

[6] Of these seventy-four species, one (*Strobi*) may be erroneously attributed to our Territory. There is probably an undescribed species of *Sphinx* to be re-discovered in the Southern States, judging from a drawing of Abbot's which I saw in the British Museum, and to which reference is perhaps made in Harris' correspondence, p. 127. From Mr. Hy. Edwards' letters we may expect the description of a new *Hemaris* from California. We can thus be sure of at least seventy-five species of this family from North America, north of Mexico and the West India Islands.

IX. North American Pyralides

BY A. R. GROTE.

[*Read before this Society, January* 22, 1875.]

Asopia devialis, n. s.

♀.—About the size of *olinalis*. The color is pale, not so reddish or purplish as usual and the fringes are not golden or yellow. As my specimen is not fresh, the tints are not to be exactly ascertained, but the tone is evidently more brownish and less reddish on the darker fields of the wing, while the secondaries are pale and more transparent than usual; the general tint is ochery. But this species is at once to be distinguished from all the four hitherto described N. A. species, viz.: *cortalis, olinalis* (= *trentonalis*), *himonialis,* and *binodulalis,* by the shape of the transverse lines. These are *darker* than the wing, not *paler* as is usual, on the primaries springing from costal ochery blotches, their relative position being much as in *olinalis*. But the exterior line on the fore wings is evenly and shortly dentate below the costal blotch and the interior line is inwardly excavate between the median nervure and vein 1. The dentations of the exterior line are four or five in number and are discontinued below the s. m. fold. On the hind wings the dark lines are less sinuate than in *olinalis*. Beneath pale, testaceous, shining, the lines faint.

Expanse, 14 m. m. *Habitat,* Quebec (F. X. Bélanger, No. 72).

Asopia squamealis.

Pseudasopia squamealis Grote, Bull., Vol. 1, p. 172.

I have been led, by the discovery of ocelli in an allied species described below, to denude a specimen of this species and I cannot find any trace of ocelli, so that the character I have given the genus is erroneous and the species must be referred as above. It appears to me to fall in between the common *farinalis* and the species represented by *costalis, olinalis,* etc.

Arta, n. g.

This species is small, of the size of *Condylolomia participialis*. The ornamentation is like *Asopia*; two yellow median lines cross the vinous primaries. The ocelli are present. The maxillae are moderate, scaled, concealed by the somewhat dependent palpi. The fore wings are rather narrower, the external margin straighter than in *Asopia*. The antennae are simple.

The neuration has not been studied as yet. I communicated the insect under the specific name here retained for it, as a species of *Asopia*, to Prof. Zeller, who had not previously seen the species. The presence of ocelli will not allow of its being placed with that genus.

Arta statalis, n. s.

♂ ♀.—In this small species the ocelli are difficult of detection owing to the scales of the head. I have satisfied myself of their presence behind the antennae. The fore wings are silky, vinous red with darker fringes, crossed by two narrow yellow median lines approximate, the inner line incepted on costa at about the middle and running slightly inwardly obliquely, the outer line a little outwardly exserted opposite the cell; the lines are nearer together at costa than on internal margin. Hind wings dark fuscous with concolorous fringes and without lines. Beneath fuscous, the costa tinged with red, more or less diffused; there are traces of a narrow pale common line, more evident on the costae; head, thorax, abdomen beneath and legs reddish, abdomen above paler; the tibiae show a mixture of blackish scales.

Expanse, 16 m. m. *Habitat,* New York.

NOTE.—I have recently been investigating the synonymy of the Pyralides of North America with the view of catalogueing the species. I conclude that *Lanthaphe* Clemens, is identical with *Tetralopha* Zeller, Isis, 1848, and that one of the species described by Zeller has been re-described by Lederer as *Hemimatia scortialis.* I think the Brazilian species noticed by Lederer are not congeneric and that the genus may be restricted to these. I have not been able to verify these suggestions by the inspection of any of Lederer's types.

Botis *Latreille* (1805-*Botys*).

The numerous North American species show a strong resemblance to those of Europe, so that their description is attended with difficulty to the student. I am again indebted to Prof. Zeller for his kind assistance and advice in my present notes on our species. The only species I know that is apparently common to both continents is Treitschke's *Terrealis,* taken abundantly by Mr. Lintner in the vicinity of Albany.

Botis gentilis *Grote.*

This species is one of the commonest of the pale, testaceous, thinly scaled, typically ornamented species. It is the [illegible]

Zeller but not of Lederer. It may be recognized by the connection of the t. p. line with the reniform spot by concolorous brown-gray lines.

Botis feudalis, n. s.

This species may be recognized by its uniform dark testaceous brown color which deepens over the costal region. The lines are distinct and tolerably even. The anterior line arcuate; the posterior continuous, very inconspicuously rivulous or denticulate, running straightly downwards from costa to opposite the cell, roundedly exserted over the median nervules and running inwardly to below the reniform. The ordinary spots are dark, filled in, not annulate. There is a narrow very dark marginal line continuous in both wings. Hind wings with dot and a distinct median line, continuous, of the usual, medially exserted form, slightly denticulate. The terminal space on both wings is a little deeper toned and the common line followed by a faintly paler edging. Beneath duller hued with the reflection of the markings of the upper surface. Body parts concolorous. Palpi whitish with the terminal joint dark at the sides.

Expanse, 25 m. m. *Habitat,* New York; Massachusetts.

Botis 5-linealis, n. s.

Allied to the preceding but larger, paler tinted, and differing by the white ventral surface of the abdomen and a dotting on the upper surface of the wings along the terminal marginal line. The ornamentation is similar; the pale edging to the common line is more perceivable than in *feudalis,* somewhat whitish, concolorous with the paler portion of the discal field on the secondaries. The anterior line is less even, somewhat exserted on sub-costal vein. The common line is distinctly dentate on the hind wings. Under surface of wings whitish, of the body, white; the legs are white with a brown mark on the fore tibiae. The palpi are as in *B. feudalis,* white with dark terminal joint. While the tone is similar this species is paler and not so uniformly colored as its ally.

Expanse, 32 m. m. *Habitat,* New York; Massachusetts.

Botis (Pyrausta) matronalis, n. s.

♂ ♀.—This species is allied to *B. subsequalis* Guen., and to *B. generosa* G. & R., and to the European *Aurata.* Larger and duller hued then our two species hitherto described. Of these *generosa* may be known by the broad bright yellow median fascia of the hind wings and by its wanting any yellow marginal shade. The present species resembles *subsequalis* in having a yellow shade along external margin of the secondaries. The fore wings are dusky brownish, shaded with pale ochery on the disc between the spots, outside of the outer line and along terminal margin. Orbicular spot annulated; reniform filled in. Outer line distinctly marked on costa, indicated medially by dots on the

m. nervules and strongly dentate on submedian fold. The pale ochery following shade is narrow but widens on costal region, following the sinuosities of the line. The subterminal dark shade is medially extended along the veins into the ochery terminal shade which is here broader. There is a dark terminal line on both wings and the fringes are dusky. On the hind wings there is a narrow median yellow band and the deep yellow color appears subcontinuously and narrowly along the terminal margin. There are some yellow scales on the disc defining the discal dot. Beneath more entirely yellow, especially the hind wings, with the dusky lines and discal spots well defined, as well as the subterminal shades; fringes as on upper surface. Body, dusky; abdomen subannulate above with yellowish, beneath pale yellowish.

Expanse, 20 m. m. *Habitat*, Canada, Mr. Wm. Saunders, No. 223, from larva.

Botis hircinalis, n. s.

This species is allied to the European *B. opacalis* of the Alps, and *B. aerealis* of the plains. It differs from the former in the width and shape of the shade band of the primaries. Fore wings bright olivaceous over black, without markings except that the narrow pale ochery shade which follows the exterior line is here alone apparent, comparatively narrow, more sinuous than in *opacalis* and less diffuse, showing that the exterior line has a different conformation in the American species. Fringes blackish with pale tips. Hind wings unicolorous blackish, fringes paler, whitish outwardly. Head and collar deep ochery; thorax olivaceous. Beneath pale ochraceous, primaries mostly dusky; hind wings with subterminal and discal dusky shades not rayed as in *opacalis*.

Expanse, 22 m. m. *Habitat*, Center, N. Y., Mr. O. Meske.

Botis niveicilialis, n. s.

A blackish species allied to *hircinalis*, with pointed apices to the primaries and snow white fringes to both wings. Fore wings concolorous dusky blackish, with the exterior line and discal dot very feebly indicated. The line is however followed on costal region by a yellowish shade which becomes the most conspicuous feature of the ornamentation of the wing. Beneath both wings black with a faint indication of the costal shade. At the base of the fringes a faint yellow stain may be noted. Body blackish; the abdominal se[illegible]s very narrowly edged with pale; beneath paler, whitish.

[illegible]se, 24 m. m. *Habitat*, New York, Mr. Lintner (Prof. Zel-[illegible]2).

XIX. Synonymic List of the Butterflies of North America, North of Mexico

BY SAMUEL H. SCUDDER.

[*Read before this Society, January* 22, 1875.]

Part I. NYMPHALES.

THE following list has been prepared to exhibit in the briefest possible manner the classification, nomenclature, geographical distribution and larval food of North American Butterflies. It is the prodromus of a more extended catalogue in which the writer hopes to include a fuller synonymy and especially a complete index of illustrations, and which, through the co-operation of his colleague, Mr. A. R. Grote, will embrace all the Lepidoptera of North America. Complete references, however, are given here to Abbot and Smith's Insects of Georgia, Boisduval and Le Conte's Lépidoptères de l'-Amérique septentrionale, Say's American Entomology and Edward's Butterflies of North America; a few brief notes are added where it seems desirable, but the aim has been to eliminate everything unessential to the points in view. For the readier determination of the genera, analytical tables have been prefixed to each family.

The species are printed in bold faced type and, where they are polymorphic, the names which should be employed for the different forms are given in capitals, the synonyms in italics. The generic name of each reference always follows it in parenthesis, unless the species is referred by the author to the same genus as it is in the list; in such case, the generic name is omitted.

Species not seen by the writer from the region included in the list, or unknown by illustrations from the same are prefixed by an asterisk.

My thanks are especially due to Mr. W. H. Edwards, who has given me every possible facility for studying the butterflies of his unrivalled collection, without which the list would have been much less perfect. In preparing the tables of food plants I have been aided by communications from Messrs. Edwards, Saunders, Gundlach, Riley and others, and especially by the extensive notes of Dr. A. W. Chapman. Any well authenticated additions to this part of the list would be very thankfully received.

CAMBRIDGE, January 15, 1875.

TABLE FOR THE DETERMINATION OF THE GENERA OF NORTH AMERICAN BUTTERFLIES: BASED UPON THE STRUCTURE AND ORNAMENTATION OF THE WINGS:

1. Antennae widely separated at their base, the space between them more than equalling half the vertical diameter of the eye; the latter overhung by a curving pencil of bristly hairs, originating at the outer base of the antennae.......................................(Urbicolae.)

1. Antennae approximate at their base, the space between them not equalling half the vertical diameter of the eye; the latter without an overhanging pencil of bristly hairs.......................................2.

2. Foretarsi of both males and females provided with a pair of claws like the other legs.......................................(Papilionides.)

2. Foretarsi of males always, of females sometimes, with but a single median or with no apical claw.......................................3.

3. Antennae not closely approximate at their base, the space between them generally at least twice the width of the basal joint, the outer margin of the latter infringing slightly on the eye; fore legs perfect in the female.......................................(Rurales) 62.

3. Antennae closely approximate at their base, the space between them seldom surpassing the width of the basal joint; the outer edge of the latter never infringing on the margin of the eye; forelegs of the female (as well as of male) atrophied.......................................(Nymphales) 4.

4. Some of the nervures of the fore wings swollen at the base*; cell of hind wings closed.......................................(Oreades) 5.

4. None of the nervures of the fore wings swollen at the base*; or if swollen, the cell of hind wings open.......................................16.

5. Middle tibiae profusely armed above with long and stout spines.......14.

5. Middle tibiae unarmed with spines on the upper surface, or with but slight short ones.......................................6.

6. Median nervure of fore wings greatly swollen at the base, halfway to its first divarication, the swelling not decreasing uniformly from the base to the divarication.......................................7.

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*Excepting two genera which may be distinguished from the Oreades by the open cell of the hind wings: *Mestra*, in which only the costal vein of the fore wing is swollen; and *Eunica*, in which both costal and median veins are about equally swollen.

6. Median nervure of fore wings scarcely swollen at the base, or if swollen, decreasing uniformly in size from the base to the first divarication of the nervure..**10.**
7. Submedian vein greatly and abruptly swollen at the base..**Coenonympha.**
7. Submedian vein not at all or but slightly swollen at the base.......... 8.
8. Hind wings without ocellate spots beneath.................... **Megisto.**
8. Hind wings furnished with ocellate spots beneath.....................**9.**
9. Spots of under surface of hind wings in the lower subcostal and lower median interspaces equal and conspicuously larger than the rest..... (first two species of) **Cissia.**
9. Spots above mentioned neither equal, nor larger than the others...... **Neonympha.**
10. Eyes distinctly pilose.. **13.**
10. Eyes naked or very inconspicuously pilose.... .... **11.**
11. Club of antennae insensibly merging into the stalk................ **12.**
11. Club of antennae distinct................. ....**Erebia.**
12. Basal half of hind wings marbled beneath....... .... **Cercyonis.**
12. Basal half of hind wings not marbled beneath ...(last species of) **Cissia.**
13. Hind wings distinctly dentate or angulated at the upper median nervule..**Enodia.**
13. Hind wings entire.. **Satyrodes.**
14. Eyes hairy..**Gyrocheilus.***
14. Eyes naked.... .... **15.**
15. Middle tibiae scarcely more than half as long as the middle femora..... **Neominois.**
15. Middle tibiae almost as long as the middle femora.............. **Oeneis.**
16. Antennae naked; fore wings elongated...............(**Heliconidae**) **17.**
16. Antennae scaled; fore wings seldom elongated......................**22.**
17. Wings almost wholly diaphanous......................... **Hymenitis.**
17. Wings scaled throughout.. **18.**
18. Cell of fore wings longer than extreme breadth of the wing.........**19.**
18. Cell of fore wings rather shorter than the breadth of the wing...... **21.**
19. Upper surface of hind wings with a postmesial series of light spots on a dark ground.....................................**Apostraphia.**
19. Upper surface of hind wings with a postmesial black band on a fulvous ground...**20.**
20. The atrophied recurrent nervule at the tip of the cell in fore wings, originating between the two lower subcostal nervules..........**Dynothea.**
20. The atrophied recurrent nervule at tip of the cell in fore wings arising between the lowest subcostal and upper median nervules..**Mechanitis.**
21. Middle of the median interspaces of the fore wings furnished with white spots... **Anosia.**

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* The characters here given may be insufficient to distinguish Gyrocheilus, which I have not been able to examine when preparing this table.

21. Middle of the median interspaces of fore wings unprovided with white spots..**Danaida.**

22. Palpi not so long as the thorax..........................(**Najades**) **28.**

22. Palpi much longer than the thorax............ ... (**Hypati**) **Hypatus.**

23. Upper surface of tarsi devoid of spines............................**25.**

23. Upper surface of tarsi spiny...**24.**

24. Cell of both wings closed...............................(**Dryades**) **49.**

24. Cell of both wings open.......................(part of **Praefecti**) **36.**

25. Second superior subcostal nervule, thrown out before the first inferior subcostal nervule (i. e. before the apex of the cell)................ **28.**

25. Second superior subcostal nervule of fore wings arising at or beyond the first inferior subcostal nervule..................................**26.**

26. Cell of hind wings open..**27.**

26. Cell of hind wings closed.........................(**Hamadryades**) **55.**

27. Last palpal joint fully one third the length of the penultimate......
(part of **Praefecti**) **36.**

27. Last palpal joint about one fourth the length of the penultimate......
(part of **Argonautae**) **30.**

28. The vein closing the cell of fore wings strikes the median nervure either nearly or quite as far beyond its second divarication, as half the distance between the base of the first and second median nervules ; or else before the second divarication *................part of **Praefecti**) **36.**

28. The vein closing the cell of fore wings strikes the median nervure opposite, or just beyond its second divarication *... .... **29.**

29. Palpi stout and distinctly tapering...........(part of **Argonautae**) **30.**

29. Palpi rather slender and of uniform size throughout, excepting of course at the extreme tip............ ....(**Archontes**) **34.**

30. Hind wings tailed...**31.**

30. Hind wings not tailed...**32.**

31. Costal nervure of fore wings terminating a little beyond the middle of the costal border..**Cœa.**

31. Costal nervure of the fore wings terminating close to the apex...**Anaea.**

32. Fore wings produced at the apex..................................**33.**

32. Fore wings not produced at the apex........................**Smyrna.**

33. Penultimate superior subcostal nervule running parallel with the subcostal nervure for half its length, then suddenly diverging from it.....
Historis.

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*In *Anaea*, one of the Argonautae, the connecting vein strikes the median nervure far beyond its second divarication, but it may at once be distinguished from the Praefecti of this category by its excessively short terminal palpal joint, which is not one-eighth the length of the penultimate.

Two other genera, one of Argonautae (*Historis*), the other of Praefecti (*Junonia*), have the cell open, and to them, therefore, neither of these categories are applicable. In the Argonaut, the cell (measuring from its base to the origin of the inferior subcostal nervules) is more than one-third, in the Praefect less than one-third the length of the wing. By these statements, all these forms may readily be referred to their proper groups.

33. Penultimate superior subcostal nervule diverging from the main nervure at its origin and pursuing a uniform course....................**Chloríppe.**

34. Costal and median veins swollen at the base....................**Eunica.**

34. Costal and median veins not swollen at the base....................35.

35. Upper surface of hind wings provided with a distinct submarginal row of white or blue spots....................**Basilarchia.**

35. Upper surface of hind wings with no distinct submarginal row of spots....................**Limenitis.**

36. Costal and median veins of fore wings prominently swollen at the base....................**Mestra.**

36. None of the veins prominently swollen at the base....................37.

37. Veins closing the cell of fore wings distinctly swollen beneath......**Amphichlora.**

37. Veins at apex of cell of ordinary size....................38.

38. Cells of both wings open....................39.

38. Cells of both wings closed by a feeble vein....................44.

39. Hind wings regularly rounded....................40.

39. Upper median nervule of hind wings more or less produced into a tail....................41.

40. Outer margin of fore wings uniformly and slightly convex...**Diaethria.**

40. Outer margin of fore wings sinuous....................**Junonia.**

41. Tail of upper median nervule of hind wings much less than half as long as the antennae....................42.

41. Tail of upper median nervule of hind wings much more than half as long as the antennae....................43.

42. Upper median nervule of fore wings curved much more strongly near the base than that of hind wings....................**Victorina.**

42. Upper median nervule of fore wings greatly curved, as in the hind wings....................**Anartia.**

43. Basal half of wing beneath silvery white, in striking contrast to the rest of the wings....................**Timetes.**

43. Basal half of wings beneath nearly concolorous with the outer half.....**Athena.**

44. Upper median nervule of hind wings produced to a more or less prominent tail or tooth....................45.

44. Border of hind wings not more produced at the upper median nervule than elsewhere....................**Vanessa.**

45. Upper surface of wings with a distinct, continuous, marginal or submarginal band of lighter color than the rest of the wing....................46.

45. Upper surface of wing without any continuous band of light color...47.

46. The light band submarginal....................**Aglais.**

46. The light band marginal....................**Papilio.**

47. Inner margin of fore wings straight....................48.

47. Inner margin of fore wings distinctly excised in the apical half......**Polygonia.**

48. Tail of upper median nervule of hind wings broad and bluntly rounded at tip.. **Eugonia.**

48. Tail of upper median nervule of hind wings slender and pointed at tip.. **Hypanartia.**

49. Fore wings at least twice as long as broad.............. ....**54.**

49. Fore wings less than twice as long as broad........................**50.**

50. Second superior subcostal nervule of fore wings arising beyond the apex of the cell..**51.**

50. Second superior subcostal nervule of fore wings arising at or before the tip of the cell...**52.**

51. Outer margin of fore wings regularly convex.... ....**Brenthis.**

51. Outer margin of fore wings sinuous.........................**Euptoieta.**

52. Basal half of hind wings covered beneath with frequent large light spots........... ....**53.**

52. Basal half of hind wings unspotted beneath or with only one or two faint light spots.. **Semnopsyche.**

53. Outer half of upper surface of hind wings with at least three series of black markings on a fulvous ground, the spots of the innermost usually confluent...**Argynnis.**

53. Outer half of upper surface of hind wings with two rows of pale markings on a blackish ground, none of the spots confluent...... **Speyeria.**

54. First subcostal nervule of fore wings emitted beyond the apex of the cell; pulvilli and paronychia wanting..................... **Agraulis.**

54. First subcostal nervule of fore wings emitted at the end of the cell; pulvilli and paronychia present............................**Colaenis.**

55. Last superior subcostal nervule emitted about half way between the tip of the cell and the apex of the wing; only two superior branches to the subcostal nervure arising beyond the cell......................**56.**

55. Last superior subcostal nervule arising much more than half-way from the tip of the cell to the apex of the wing; three superior subcostal nervules arising far beyond the apex of the cell.................. **57.**

56. Basal half of hind wings spotted above..................... **Lemonias.**

56. Basal half of hind wings immaculate above..............**Euphydryas.**

57. Under surface of hind wings with distinct white or yellow mesial and submarginal bands, interrupted by the nervules, but never broken into sagittate spots... **58.**

57. Under surface of hind wings without distinct light colored mesial and submarginal bands; or, if present, not interrupted by the nervules or else wholly formed of sagittate spots........................... **60.**

58. Spots of the submarginal band of under surface of hind wings strongly arched on the inner edge; mesial band traversed to a greater or less extent by dark transverse lines.................................**59.**

58. Spots of the submarginal band of under surface of hind wings with a straight or scarcely curved interior outline; mesial band not transversed by transverse lines...**Thessalia.**

59. Upper surface of wings furnished at the outer edge, just within the fringe, with a slender series of fulvous spots..............**Schoenis.**

59. Upper surface of wings with the outer border excepting the fringe wholly black.............................. ....**Cinclidia.**

60. Outer edge of fore wings scarcely or not at all excised in the median area...61.

60. Outer edge of fore wings distinctly though roundly excised in the median area.. 62.

61. Hind wings furnished with a submarginal row of small dark spots always distinct upon both surfaces, some of the spots always pupillate with white.. **Charidryas.**

61. Hind wings generally furnished with a submarginal row of small dark spots, often indistinct above and never pupillate with white on either side... ...**Phyciodes.**

62. Posterior margin of hind wings nearly straight between the middle subcostal nervule and the anal angle.......................**Anthanassa.**

62. Posterior margin of hind wings regularly and uniformly rounded throughout ....**Chlosyne.**

SYNONYMIC LIST OF AMERICAN NYMPHALES.

Family **NYMPHALES** *Linn.* (1758).

[Nymphalidae *Steph.*, 1828.]

I. Subfamily PRAETORES *Herbst* (1796).

[Oreades *Hübn.* Verz., 1816.]

I. Tribe: OREADES *Borkh.* (1788).

[Satyridae *Swains.*, 1822–23.]

1. OENEIS *Hübner* (1816).

Type: Papilio Norna *Esper.*

1. ***Tarpeia** *Esp.*, Schmett. Eur. 1, pl. 83, figs. 1, 2 (*Papilio*); Dup., Lép. France 1, 207, pl. 81, figs. 6–7 (*Satyrus*); Butl., Cat. Satyr. 161.
Tarpeja Borkh., Eur. Schmett., 1, 101 (Papilio).
Celimene Cram., Pap. Exot., 4, pl. 376, figs. E. F. (*Papilio*).
Nanna Mén., Bull. Acad. St. Petersb., 17, 216 (*Chionobas*).
Arctic America (Arctic Asia and Russia).
This is given on the authority of Butler.

2. **Uhleri** *Reak.*, Proc. Ent. Soc. Phil., 6, 143 (*Chionobas*); Butl., Cat. Satyr., 163.
Rocky Mountains.

3. **Iduna** *Edw.*. Butt. N. Amer., 2, pl. *Chionobas* I, figs. 1–4 (*Chionobas*).
California.

4. **gigas** *Butl.*, Cat. Satyr., 161, pl. 2, fig. 2; Edw., Butt. N. Am., 2, pl. *Chionobas* 1, figs. 5–6 (*Chionobas*).
Vancouver's Island.

5. **nevadensis** *Feld.*, Reise Novara pl. 62 (*Chionobas*); Butl., Cat. Satyr., 161
californica Boisd., Am. Soc. Ent. Belg., 12, 62 (*Chionobas*).
Sierra Nevada.

Mr. Edwards considers *nevadensis* and *californica* distinct species, and has given me some good reasons for his belief. I place them together provisionally.

6. **Chryxus** *Westw.-Hewits.*, Gen. Diurn. Lep., 383, pl. 64, fig. 1 (*Chionobas*); Butl., Cat. Satyr., 161.
Taygete Gey. in Hübn., Samml. exot. Schmett., 3, figs. 3, 4 (nec 1–2).
Calais Scudd., Proc. Ent. Soc. Phil., 5, 7 (*Chionobas*).
Hudson's Bay; mountains of Colorado and California.

Mr. Edwards, who possesses the type of *Calais*, says it is the ♀ of *Chryxus*.

7. **Polixenes** *Fabr.*, Syst. Ent., 484 (*Papilio*); Westw.-Hewits., Gen. Diurn. Lep., 503 (*Neonympha*); Kirb., Syn. Cat. Diurn. Lep. 70.
? *Melissa* Fabr., Syst. Ent., 573 (*Papilio*).
Bore Esp., Schmett., tab. 100, Cont. 55, fig. 1 (*Papilio*).
Fortunatus Fabr., Ent. Syst., 3, 1, 152 (*Papilio*).
Norna Quenst., Act. Holm., 1791, 272 (*Papilio*).
Bootes Hübn., Eur. Schmett., figs. 1025–8 (*Papilio*); Boisd.-LeC. Lép. Am. Sept. 218 (*Chionobas*).
Taygete Gey. in Hübn., Exot. Schmett., 3, figs. 1–2.
Greenland; Labrador; Newfoundland (Lapland).

8. **semidea** *Say*, Amer. Ent. pl. 50 (*Hipparchia*); Morr., Syn. Lep. N. Amer 80 (*Coenonympha*); Edw., Morr. Syn. Lep. N. Amer., 351.
Also (pars) Boisd., Icon. 1, 197 (*Chionobas*).
White Mountains, New Hampshire.
Food plant: *Carex rigida.*

9. **Oeno** *Boisd.*, Icon., pl. 39, figs. 4–6 (*Chionobas*); Butl. Cat. Satyr., 163; Boisd.-LeC., Lép. Am. Sept., 220 (*Chionobas*).
Also Boisd., Icon., pl. 40, figs. 1–2 (*Chionobas*); Boisd.-LeC. Lép Am. Sept. 222 (*Chionobas*).
Crambis Frey., Neuer. Beitr., 5, tab. 440, figs. 3–4 (*Papilio*).
subhyalina Curt., Ross. Narr. App., 68 (*Hipparchia*).
assimilis Butl. Cat. Satyr. 163, pl. 2, fig. 10.
Labrador; Arctic America (and Europe).

10. **Jutta** *Hubn.*, Eur. Schmett., figs. 614–5 (*Papilio*); Boisd., Icon. pl. 38, figs. 1–4 (*Chionobas*); Dup. Lép. de France, pl. 40, figs. 35 (*Satyrus*); Butl. Cat. Satyr., 160.
Balder Boisd., Icon., 1, 189, pl. 39, figs. 1–3 (*Chionobas*); Boisd.-LeC., Lép. Am. Sept., 215 (*Chionobas*).
Balderi Hübn., Zutr., figs. 981–2 (*Eumenis*).
Eastern boreal America, north of United States (boreal countries of old world).

2. NEOMINOIS *Scudder.*

Type: Satyrus Ridingsii *Edw.*

This group has the structure of the legs seen in *Minois*, in which respect it is allied to *Oeneis*, and differs from other American *Oreades*.

11. **Ridingsii** *Edw.*, Proc. Ent. Soc. Phil., 4, 201 (*Satyrus*).
Stretchii Edw., Trans. Amer. Ent. Soc., 3, 192 (*Chionobas*).
Colorado; Nevada; Montana.

3. GYROCHEILUS *Butler* (1867).

Type: Pronophila Patrobas *Hewits.*

12. **Tritonia** *Edw.*, Trans. Am. Ent. Soc., 5, 18 (*Geirocheilus*).
Arizona.

4. ENODIA *Hübner* (1816).

Type: Oreas marmorata Andromacha *Hübn.*

13. **Portlandia** *Fabr.*, Spec. Ins., 2, 82 (*Papilio*); Boisd.-LeC., Lép. Amer. Sept., 226, pl. 58, figs. 1–5 (*Satyrus*); Westw.-Hewits., Gen. Diurn. Lep. 360 (*Debis*); Butl. Cat. Satyr., 114 (*Lethe*); Kirb., Syn. Cat. Lep. 55 (*Euptychia*); Scudd., Rev. Amer. Butt., 5.
Andromacha Hübn., Exot. Schmett., 1 (*Oreas marmorata*); Say, Am. Ent., pl. 36 (*Hipparchia*).
Androcardia Hübn., Ind. Exot. Lep., 1.
United States east of Great Plains.
Food-plant: Grass.

5. CERCYONIS *Speyer* in litteris.

Type: Papilio Alope *Fabr.*

Dr. Speyer has pointed out to me that the European *Minois*, of which *Phaedra* is the type, differs from this group, which I formerly referred to *Minois*, in its very short and thickly spined middle legs, and in the absence of the marked excision of the hind wings at the anal angle, so noticeable in *Cercyonis*.

14. **Pegala** *Fabr.*, Ent. Syst., 3. 1, 230 (*Papilio*); God., Encycl. Méth. 9, 524 (*Satyrus*).
Extreme Southern United States, east of Rocky Mountains.

37. ochracea *Edw.*, Proc. Acad. Nat. Sc., 1861, 163.
? Davus var. *Isis* Butl. Cat. Satyr., 47.
Newfoundland; Northern Lake Winnipeg; Kansas; California; Colorado.

38. *Ampelos *Edw.*, Trans. Am. Ent. Soc., 3, 213.
Oregon.

39. *Kodiak *Edw.*, Trans. Am. Ent. Soc., 2, 375.
Kodiak.

40. inornata *Edw.*, Proc. Acad. Nat. Sc. Phil., 1861, 163.
Lake Winnipeg, to the Pacific coast.

41. California *Westw.-Hewits.*, Gen. Diurn. Lep., 398, pl. 67, fig. 2.
Californius Boisd., Ann. Soc. Ent. Fr., [2] 10, 309 (*Satyrus*).
californica Edw., Syn., N. Amer. Butt., 25.
Galactinus Boisd., Ann. Soc. Ent. Fr., [2] 10, 309 (*Satyrus*).
Ceres Butl., Ent. Montl. Mag., 4, 78.
California; Montana.

9. NEONYMPHA *Hübner* (1816).

Type: Oreas fimbriata Helicta *Hübn.*

42. Cornelius *Fabr.*, Ent. Syst., 3, 1, 220 (*Papilio*); God., Encycl. Méth., 9, 493 (*Satyrus*); Westw.-Hewit., Gen. Diurn. Lep., 438 (*Eurygona*); Butl., Cat. Fabr. Lep., 15 (*Euptychia*).
Gemma Hübn., Zutr. Samml. exot. Schmett., 1, figs. 7–8; Boisd.-Le C., Lép. Am. Sept., pl. 62, figs. 1–5 (*Satyrus*).
Southern States (Polochic Valley).
Food-plant: Grass.

43. Phocion *Fabr.*, Ent. Syst., 3, 218 (*Papilio*); Butl., Cat. Satyr., 37 (*Euptychia*); Scudd., Rev. Am. Butt., 7 (*Megisto*); Westw.-Hewit., Gen. Diurn. Lep., 375.
areolatus Smith-Abb., Ins. Geo., 1, 25, tab. 13 (*Papilio*); Boisd.-Le C., Lép. Am. Sept., pl. 63, figs. 5–8 (*Satyrus*).
Helicta Hübn., Samml. Exot. Schmett., 1 (*Oreas fimbriata*).
Atlantic States, from New York southward.
Food-plant: *Andropogan nutans, Panicum sanguinale.*

10. MEGISTO *Hübner* (1816).

Type: Megisto Acmenis *Hubn.*

44. Acmenis *Hübn.*, Zutr. Samml. Exot. Schmett., figs. 233–4; Westw.-Hewit., Gen. Diurn. Lep., 375 (*Neonympha*); Butl., Proc. Zool. Soc., 1866, 476 (*Euptychia*).
Baltimore (fide Hübn.).

This butterfly is unknown to American lepidopterists, and it seems very doubtful whether it can be considered American; more particularly as three other Satyrids given by Hübner in this same work, under the names of Symphaedra, Alcandra, Mycalesis, Otrea and Yphthima, Philomela (all said by him to come *aus Georgien in Florida*), have since been discovered to be East Indian species.

26. **Eurydice** *Linn.-Johanss.*, Amoen. Acad., 6, 406 (*Papilio*); Scudd., Rev. Amer. Butt., 6 (*Argus*).
Canthus Linn., Syst. Nat., Ed. 12, 2, 768 (*Papilio*); Boisd.-Le C. Lép. Am. Sept., pl. 60, figs. 1–4 (*Satyrus*).
Cantheus God., Encycl. Méth., 9, 493 (*Satyrus*).
transmontana Gosse, Newm. Entom., 138 (*Hipparchia*).
Boisduvalii Harr., Ins. Inj. Veg. Ed. 3, 305, fig. 128 (*Hipparchia*)
Northern United States, east of Great Plains.
Food-plant: Grass.

7. EREBIA *Dalman* (1816).

Type: Papilio Ligea *Linn.*

This group exhibits considerable variation in the recurvation of the fore wings. I have even seen specimens of *E. Mancinus* in which, on one side, the first superior subcostal nervule appears as a branched vein, the second superior subcostal nervule originating from it, instead of from the main nervure.

27. **Epipsodea** *Butl.*, Catal. Satyr., 80, pl. 2, fig. 9.
Rhodia Edw., Trans. Amer. Ent. Soc., 3, 273.
Rocky Mountains.

28. **Mancinus** *Westw.-Hewits.*, Gen. Diurn. Lep., 380, pl. 54, fig. 2.
Disa, var. *Mancinus* Butl., Catal. Satyr., 89.
Rocky Mountains; Alaska.

29. **Rossii** *Curt.*, Ross, Narr. App., 67, pl. A, fig. 7 (*Hipparchia*); Westw.-Hewits., Gen. Diurn. Lep., 380.
Arctic America.

30. **Callias** *Edw.*, Trans. Amer. Ent. Soc., 3, 274.
Colorado.

31. * **Haydenii** *Edw.*, Hayd., Rep. Geol. Sur. Mont., 1872, 467.
Wyoming.

32. **Vesagus** *Westw.-Hewit.*, Gen. Diurn. Lep., 380, pl. 64, fig. 3.
Rocky Mountains.

33. **discoidalis** *Kirb.*, Faun. Bor. Amer., 298, pl. 3, figs. 2–3 (*Hipparchia*); Westw.-Hewit., Gen. Diurn. Lep., 380.
Hudson's Bay to Alaska.

34. **fasciata** *Butl.*, Catal. Satyr., 92, pl. 2, fig. 8.
Arctic America.

8. COENONYMPHA *Hübner* (1816).

Type: Papilio Oedippus *Fabr.*

35. * **Brenda** *Edw.*, Trans. Am. Ent. Soc., 2, 375.
Southern California.

36. * **pamphiloides** *Reak.*, Proc. Ent. Soc. Phil., 6, 146 note.
California

13. ANOSIA *Hübner* (1816).

Type: Limnas ferruginea Vincetoxici *Hübn.*

49. Berenice *Cram.*, Pap. Exot., 3, pl. 205, figs. E F (*Papilio*); Boisd.–Le C., Lép. Am. Sept., 134, pl. 39 (*Danais*).
Erippus Fabr. (nec Cram.), Mant. Ins., 2, 27 (*Papilio*).
Erippe Hübn., Verz. Schmett., 16.
Gilippus Smith–Abb., (nec Cram.) Lep. Ins. Geo., 1, pl. 7 (*Papilio*).
Vincedoxici Hübn., Exot. Schmett., 1 (*Limnas ferruginea*).
Vincetoxici Hübn., Verz. Schmett., 16.
Southernmost United States, as far west as New Mexico (Antilles, Mexico).
Food-plants: *Asclepias amplexicaulis, A. obtusifolia, Gonolubus hirsutus.*

50. strigosa *Bates*, Ent. Monthl. Mag., 1, 32 (*Danais*).
Texas.
Is it clearly distinct from Berenice?

III. Tribe: HELICONII *Linn.* (1758).

(Heliconii *Fabr.*, 1781; Nereides *Hübn.*, 1816; Heliconidae *Doubl.*, 1844.]

14. HYMENITIS *Hübner* (1816).

Type: Papilio diaphanus *Drury.*

51. *diaphana (*Diaphanus*) *Drur.*, Ill. Exot. Ent., 2, pl. 7, fig. 3 (*Papilio*); Doubl., Gen. Diurn. Lep., 125 (*Ithomia–Hymenitis*).
diaphane Hübn., Verz. Schmett., 8.
Florida; Louisiana; Texas (Antilles).

I cannot find any authority for the occurrence of this butterfly within our limits, excepting Edwards' Synopsis, and Mr. Edwards does not recollect upon what grounds he placed it there.

52. Phono *Gey.* in Hübn., Zutr. Exot. Schmett., figs. 987–8.
Florida.
Placed here on the authority of Geyer.

15. DYNOTHEA *Reakirt* (1866).

Type: Papilio Lycaste *Fabr.*

53. *Lycaste *Fabr.*, Ent. Syst., 3, 1, 161 (*Papilio*); Reak., Proc. Ent. Soc. Phil., 5, 222.
Los Angelos, California (southward to Guiana).
IPHIANASSA Doubl., Gen. Diurn. Lep., 127 (*Ceratinia*).
Lycaste God., Encycl. Méth., 9, 221 (*Heliconia*); Reak., Proc. Ent. Soc. Phil., 5, 219 (*Ceratinia*); Hewits., Exot. Butt., 1, pl. Ith. 15, fig. 92 (*Ithomia*).
Los Angelos, California (southward to Guiana).
PANAMENSIS Bates, Proc. Zool. Soc. Lond., 1863, 245 (*Ithomia*).
Panama.

ANAPHISSA Herr.-Schaeff., Prod. Lep. 1, 49 (*Ithomia*); Reak., Proc. Ent. Soc. Phil., 5, 220 (*Ceratinia*).

Iphianassa Hewits., Exot. Butt., 1, pl. Ith. 15, fig. 91 (*Ithomia*).

ew .Grenada.)

NEGRÈTA Reak., Proc. Ent. Soc. Phil., 5, 220 (*Ceratinia*).

os Angelos, California.

PHANESSA Herr.-Schaeff., Prodr. Lep., 1, 49 (*Ithomia*); Reak., Proc. Ent. Soc. Phil., 5, 221 (*Ceratinia*).

Iphianassa Hewits., Exot. Butt., 1, pl. Ith. 15, fig. 93 (*Ithomia*).

ew Grenada.)

CHIMBORAZANA Reak., Proc. Ent. Soc. Phil., 5, 221 (*Ceratinia*).

cuador.)

16. MECHANITIS *Fabricius* (1807).

Type: Papilio Polymnia *Linn.*

. *** californica** *Reak.*, Proc. Ent. Soc. Phil., 5, 223.

os Angelos, California.

17. APOSTRAPHIA *Hubner* (1816).

Type: Papilio Charithonia *Linn.*

. **Charithonia** *Linn.*, Syst. Nat. Ed. 12, 757 (*Papilio*).

Charitonia Fabr., Syst. Ent., 462 (*Papilio*); God., Encycl. Méth., 9, 210 (*Heliconia*); Boisd.-LeC., Lép. Am. Sept., 140, pl. 41, figs. 1-2 (*Heliconia*); Hübn., Verz. Schmett., 13.

ea-coast of extreme southern United States (Antilles, Mexico and Central erica).

III. Subfamily NAJADES *Borkh.* (1788).

[Nymphalinae *Bates.*, 1861.]

IV. Tribe: ARGONAUTAE *Cram.* (1782).

alerati *Hubn.*, 1816; Paphianae *Swains.*, 1832–33; Apaturidae *Staud.-Wocke*, 1871.]

18. SMYRNA *Hubner* (1822–6).

Type: Smyrna Blomfildii *Hubn.*

. ***Karwinskii** *Gey.* in Hübn., Samml. Exot. Schmett., 3.

exas; New Mexico (Mexico; Guatemala).

19. COEA *Hubner* (1816).

Type: Papilio Acheronta *Fabr.*

. **Acheronta** *Fabr.*, Syst. Ent., 501 (*Papilio*); God., Encycl. Méth., 9, 358 (*Nymphalis*); Edw., Syn. N. Am. Butt., 23 (*Megistanis*); Hübn., Verz. Schmett., 48.

Cadmus Cram., Pap. Exot., 1, pl. 22, figs. A B (*Papilio*).

Phcrecydes Cram., Pap. Exot., 4, pl. 330, figs. A B (*Papilio*).

exas; New Mexico [Westwood erroneously New York] to Brazil.

20. HISTORIS *Hubner* (1816).

Type: Papilio Odius *Fabr.*?

58. Orion *Fabr.*, Syst. Ent., 485 (*Papilio*); God., Encycl. Méth., 9, 368 (*Nymphalis*); Boisd.-LeC., Lép. Am. Sept., 195, pl. 52 (*Aganisthos*).

Odius Fabr., Syst. Ent., 457 (*Papilio*).
Odia Hübn., Verz. Schmett., 35.
Danae Cram., Pap. Exot., 1, pl. 84, figs. A B (*Papilio*).

Florida (Antilles and southward to Brazil).

Odius and *Orion* of Fabricius were published at the same time. The first author who placed them together as one species, and selected one of these names to be retained, was Godart, who chose *Orion*, and this action is therefore binding upon Zoologists of the present day.

21. ANAEA *Hübner* (1816).

Type: Papilio Troglodyta *Fabr.*

59. Andria *Scudd.*

Glycerium Morr., (nec Doubl.) Syn. Lep. N. Am., 67 (*Paphia*); Ril., (nec Doubl.) Am. Ent., 2, 121, figs. 81–83 (*Paphia*); Edw., (nec Doubl.) Butt. N. Am. 1, pl. Paphia, figs. 1–6 (*Paphia*).

Mississippi Valley, westward to Great Plains; Texas.

Food-plant: *Croton capitatum.*

Our butterfly seems to me clearly distinct from *A. Glycerium.* Compare the illustrations of Hewitson and Edwards.

60. Troglodyta *Fabr.*, Syst. Ent., 502 (*Papilio*); God. Encycl. Méth., 9, 365 (*Nymphalis*); Westw.-Hewits., Gen. Diurn. Lep., 318 (*Paphia*); Hübn., Verz. Schmett., 48.

Troglodita Fabr., Mant. Ins., 47 (*Papilio*).
Astyanax Cram., Pap. Exot., 4, pl. 337, figs. A B (*Papilio*).
Astina Hubn., Samml., Exot. Schmett., 1 (*Hamadryas undata*).
Portia God., (nec Fabr.) Encycl. Méth., 9, 364 (*Nymphalis*).

Florida (Antilles).

22. CHLORIPPE *Boisduval* (1844).

Type: Nymphalis Laurentia *God.*

61. Herse *Fabr.* (*Papilio*).

CLYTON Boisd.-LeC., Lép. Am. Sept., 208, pl. 56, figs. 1–4 (*Apatura*).
Herse Fabr., Ent. Syst., 3, 229 (*Papilio*); Westw.-Hewits., Gen. Diurn. Lep., 392 (*Satyrus?*); Scudd., Syst. Rev., 9 (*Doxocopa*); Ril., Trans. St. Louis Acad. Sc., 3, 198, figs. 5–6 (*Apatura*).
Idyia (pars) Herr.-Schaeff., (nec Hübn.) Prodr. Lep., 80 (*Doxocopa*).
Lycaon (pars) Butl., (nec. Fabr.) Cat. Fabr. Lep., 57 (*Apatura*).
PROSERPINA Scudd., Trans. Chic. Acad. Sc., 1, 332 (*Apatura*).

United States east of the Great Plains, excepting the northernmost States.

Food-plant: *Celtis occidentalis.*

62. Lycaon *Fabr.*, Ent. Syst., 3, 228 (*Papilio*); Westw.-Hewits., Gen. Diurn. Lep., 392 (*Satyrus* ?); Scudd., Syst. Rev., 9 (*Doxocopa*); Ril., Trans. St. Louis Acad. Sc., 3, 195, figs. 3–4 (*Apatura*).

Celtis Boisd.-LeC., Lép. Am. Sept. 21, pl. 57 (*Apatura*).

Alicia Edw., Butt. N. Am., pl. Apatura 1, figs. 1–4 (*Apatura*).

Southern half of the United States east of the Great Plains.

Food-plant: *Celtis occidentalis.*

The presence in the United States of a third species of *Chlorippe* (*Idyia* Hübn.) seems to me to be insufficiently verified.

V. Tribe: ARCHONTES *Herbst.* (1798).

[Papiliones maculato-fasciata *Wien. Verz.*, 1775; Nymphalidae *Dup.*, 1844; Limenitides *Butl.*, 1869.]

23. BASILARCHIA *Scudder* (1872).

Type: Papilio Astyanax *Fabr.*

63. Weidemeyeri *Edw.*, Proc. Acad. Nat. Sc. Phil., 1861, 162, pl. 2, figs. 1, 4 [ined.?] (*Limenitis*); Grote, Can. Ent., 5, 143; Edw., Butt. N. Am., 1, pl. Limenitis 2, figs. 1–4 (*Limenitis*).

Rocky Mountain region from Montana to Colorado.

64. Arthemis *Drury* (*Papilio*).

LAMINA *Fabr.*, Ent. Syst., 3, 118 (*Papilio*).

Arthemis Drury, Ill. Nat. Hist., 2, pl. 10, figs. 3–4 (*Papilio*); Say, Amer. Ent. 2, pl. 23 (*Limenitis*); Boisd.-Le C., Lép. Am. Sept., 202, pl. 54, figs. 1–3 (*Nymphalis*); Scudd., Syst. Rev. 8.

Artemis Doubl., Cat. Lep. Brit. Mus., 1, 96 (*Nymphalis*).

PROSERPINA Edw., Proc. Ent. Soc. Phil., 5, 148 (*Limenitis*); Ib., Trans. Am. Ent. Soc., 1, 286, pl. 4 [some marked 5], (*Limenitis*); Ib., Butt. N. Am., 1, pl. Limenitis 1, figs. 1–4 (*Limenitis*).

East of the Rocky Mountains from McKenzie River and the Northern shore of the St. Lawrence, southward to the northernmost of the United States.

Food-plants: *Betula lenta*, hawthorn, willow.

I place *Proserpina* as a dimorphic form of *Arthemis* with much hesitancy, and only provisionally. It is very probably a hybrid of *Arthemis* and *Astyanax*.

65. Astyanax *Fabr.*, Syst. Ent. 447 (*Papilio*); Butl., Cat. Fabr. Lep., 60 (*Limenitis*); Scudd., Syst. Rev., 8.

Ephestion Stoll, Suppl. Cram. Pap. Exot., pl. 25, figs. 1, 1a (*Papilio*).

Ephestiaena Hübn., Verz. Schmett., 38 (*Callianira*).

Ursula Fabr., Ent. Syst., 3, 82 (*Papilio*); Sm.-Abb., Lep. Ins. Geo., pl. 10 (*Papilio*); Boisd.-LeC., Lép. Am. Sept., 199, pl. 53, figs. 1–4 (*Nymphalis*).

United States, east of and including the Mississippi Valley; Southern Ontario; Arizona.

Food-plants: Apple, cherry, quince, hawthorn, wild gooseberry, willows, plum, *Quercus, ilicifolia, Carpinus americana, Vaccinium stramineum.*

66. Archippus *Cram.* (nec Fabr.), Pap. Exot., 1, 24, pl. 16, figs. A B (*Papilio*); Verl., Comm. Zool., 20 (*Nymphalis*); Butl., Cat. Fabr. Lep., 60 (*Limenitis*).

Archippe Hübn., Verz. Schmett., 16 (*Anosia*).

Misippus Fabr. (nec Linn.), Syst. Ent., 481 (*Papilio*).

Disippe God., Encycl. Méth., 9, 393 (*Nymphalis*); Scudd., Syst. Rev., 8.

Disippus Boisd.-Le C., Lép. Am. Sept., 204, pl. 55, figs. 1–4 (*Nymphalis*).

United States, east of the Sierra Nevada; Southern Canada.

Food-plants: Willows, *Populus balsamifera, P. tremuloides, P. monilifera, P. dilatata, Prunus,* apple, *Quercus ilicifolia, Q. rubra?*

24. LIMENITIS *Fabricius* (1807).

Type: Papilio Camilla *Wien. Verz.*

67. californica *Butl.*, Proc. Zool. Soc., 1865, 485 (*Heterochroa*); Kirb., Syn. Cat. Lep., 235 (*Adelpha*); Edw., Syn. N. Am. Butt., 23.

Eulalia Boisd. (nec Doubl.), Ann. Soc. Ent. Fr., [2] 10, 301; Edw[illegible]. (nec Doubl.), Proc. Acad. Nat. Sc. Phil., 1862, 225.

Bredowii Edw. (nec Hübn.), Butt. N. Amer., 1, pl. Limenitis [illegible], figs. 1–3.

California.

68. Lorquinii *Boisd.*, Ann. Soc. Ent. Fr., [2] 10, 301; Kirb., Syn. Cat. Lep[illegible], 235 (*Adelpha*); Edw., Butt. N. Am., 1, pl. Limenitis 3, figs. 1–4.

California.

Food-plant: Willows.

25. EUNICA *Hübner* (1816).

Type: Papilio Monima *Cram.*

69. Monima *Cram.*, Pap. Exot., 4, pl. 387, figs. F G (*Papilio*); Hübn., Verz. Schmett., 60.

Myrto God., Encycl. Méth., 9, 418 (*Nymphalis*).

Hyperipte Edw. (nec Hübn.), Syn. N. Am. Butt., 21 (*Cybdelis*).

Florida (Antilles, Central America, Brazil).

Specimens I have seen from Florida and Cuba, which agree wholly together, seem to be much smaller than *Monima*, and are referred with some hesitation to that species, although doubtless the *Monima* of Herr.-Schaeff. (Schmett. Cuba).

VI. Tribe: PRAEFECTI *Herbst* (1794).

[Papiliones angulati *Wien. Verz.*, 1775; Hamadryades *Hübn.*, 1818; Vanessidae *Dup.*, 1844.]

26. HYPANARTIA *Hübner* (1821-25).

Type: Hypanartia Tecmesia *Hübn.*

70. ***Lethe** *Fabr.*, Ent. Syst., 3, 80 (*Papilio*); God., Encycl. Méth., 9, 818 (*Vanessa*); Doubl.-Hewits., Gen. Diurn. Lep., 194 (*Eurema*); Kirb., Syn. Cat. Lep., 180.
Demonica Hübn., Samml. Exot. Schmett., 2.
Texas; New Mexico (to Brazil).

27. POLYGONIA *Hübner* (1816).

Type: Papilio c-album *Linn.*

71. **interrogationis** *Fabr.*, Suppl. Ent. Syst., 424 (*Papilio*); Ib., Ill. Mag. Ins., 6, 281 (*Cynthia*); Harr. Hitchc. Rep., 1st Ed., 590 (*Vanessa*); Doubl.-Hewits., Gen. Diurn. Lep., 197 (*Grapta*); Scudd., Syst. Rev., 10.
p-interrogationis God., Encycl. Méth., 9, 819 (*Vanessa*).
FABRICII Edw., Trans. Am. Ent. Soc., 3, 1 (*Grapta*); Ib., Butt. N. Am., 1, pl. Grapta 5, figs. 1-6 (*Grapta*).
interrogationis Lintn., Trans. Am. Ent. Soc., 3, 313 (*Grapta*).
c-aureum Cram. (nec Lintn.), Pap. Exot., 1, pl. 19, figs. E F (*Papilio*); Boisd.-Lec., Lép. Am. Sept., 192, pl. 51, figs. 1-4 (*Vanessa*).
UMBROSA Lintn., Trans. Am. Ent. Soc., 2, 313 (*Grapta*); Edw., Butt. N. Am., 1, pl. Grapta 4, figs. 1-4, a, b, b, c-g (*Grapta*).
c-aureum Sm.-Abb., Lep. Ins. Geo., 1, 21, pl. 11 (*Papilio*); Hübn., Samml. Exot. Schmett., 2.
Crameri Scudd., Proc. Bost. Soc. Nat. Hist., 13, 276 (*Grapta*).
p-interrogationis God., Encycl. Méth., 9, 301 (*Vanessa*).

United States, east of and including the Mississippi Valley; Texas; also Canada and even to Labrador (fide Möeschler).

Food-plants: *Ulmus americana, Urtica, Boehmeria cylindrica, Humulus lupulus, Tilia americana, T. pubescens, Celtis occidentalis.*

72. **comma** *Harr.*, (*Vanessa*).
HARRISII [Harisii] Edw., Can. Ent., 5, 184 (*Grapta*).
comma Harr., Ins. Inj. Veg., 1st Ed., 221 (*Vanessa*); Doubl.-Hew., Gen. Diurn.) Lep., 197 *Grapta*); Kirb., Syn. Cat. Lep., 648 (*Nymphalis*); Edw., Butt. N. Am., 1, pl. Grapta 2, figs. 1-5, a, a, a, b, b (*Grapta*); Scudd., Syst. Rev., 10.
c-album Boisd.-Le C., Lép. Am. Sept., 190 (*Vanessa*).
Najas Scudd., Mss. (1872).
DRYAS Edw., Trans. Am. Ent. Soc., 3, 17 (*Grapta*); Ib., Butt. N. Am., 1, pl. Grapta 3, figs. 1-6 (*Grapta*).

Northern half of the United States, east of and including the Mississippi Valley, extending northward throughout Canada, and as far as Fort Simpson.

Food-plants: *Humulus lupulus, Ulmus americana, Urtica, Boehmeria cylindrica*

73. **Satyrus** *Edw.*, Trans. Am. Ent. Soc., 3, 374 (*Grapta*); Ib., Butt. N. Am., 1, pl. Grapta 6, figs. 1–4 (*Grapta*); Kirb., Syn. Cat. Lep., 648 (*Nymphalis*).

Rocky Mountain district and Pacific Coast, from Colorado and Central California to British America; Northern Ontario.

Food-plant: Urtica.

74. **Marsyas** *Edw.*, Trans. Am. Ent. Soc., 3, 16 (*Grapta*); Kirb., Syn. Cat. Lep., 648 (*Nymphalis*).

California.

Marsyas and *Satyrus* will very likely prove to be dimorphic forms of a single species.

75. **Zephyrus** *Edw.* (*Grapta*).

HYLAS Edw., Trans. Am. Ent. Soc., 4, 68 (*Grapta*).

Progne Boisd. (nec Cram.), Ann. Soc. Ent. Fr. [2] 10, 306 (*Vanessa*).

THIODAMAS Scudd.

Zephyrus Edw., Trans. Am. Ent. Soc., 3, 16 (*Grapta*); Ib., Butt. N. Am., 1, pl. Grapta 6, figs. 5–9 (*Grapta*); Kirb., Syn. Cat. Lep., 648 (*Nymphalis*).

Rocky Mountain region from Fort Simpson to Colorado, and westward to the Pacific.

Food-plant: *Azalea occidentalis.*

76. **Faunus** *Edw.* (*Grapta*).

VIRESCENS Scudd.

Faunus Edw., Proc. Acad. Nat. Sc. Phil., 1862, 222 (*Grapta*); Ib., Butt. N. Am., 1, pl. Grapta 1, figs. 1–4; Kirb., Syn. Cat. Lep., 183 (*Vanessa*); Ib., Syn. Cat. Lep., 648 (*Nymphalis*); Scudd., Syst. Rev., 10.

? *Progne* Gosse, Can. Nat., 96, 278 (*Grapta*).

GRACILIS Grote-Rob., Ann. N. Y. Lyc. Nat. Hist., 8, 432 (*Grapta*).

c-argenteum (pars) Scudd., Proc. Ess. Inst., 3, 169 (*Grapta*).

British Possessions and Northern United States, over the eastern half of the Continent, following down the Apalachians, even as far as Georgia, and reaching northward to the barren lands.

Food-plants: *Salix humilis, Betula lenta.*

77. **Silenus** *Edw.*, Trans. Am. Ent. Soc. 3, 15 (*Grapta*); Ib., Butt. N. Am., 2, pl. Grapta 1, figs. 1–4 (*Grapta*); Kirb., Syn. Cat. Lep., 648 (*Nymphalis*).

Oregon to Vancouver's Island.

78. **Oreas** *Edw.*, Trans. Am. Ent. Soc., 2, 373 (*Grapta*); Kirb., Syn. Cat. Lep., 183 (*Vanessa*); Ib., Syn. Cat. Lep., 648 (*Nymphalis*).

c-album Behr, Proc. Cal. Acad. Nat. Sc., 3, 123 (*Grapta*).

California.

Oreas and *Silenus* will very likely prove to be dimorphic forms of one species.

79. **Progne** *Cram.* (*Papilio*).

C-ARGENTEUM Kirb., Faun. Bor. Am., 4, 292, pl. 3, figs. 6–7 (*Vanessa–Grapta*).

Progne Cram., Pap. Exot., 2, pl. 5, figs. E F (*Papilio*); God., Encycl. Méth., 9, 304 (*Vanessa*); Doubl.-Hewits., Gen. Diurn. Lep., 197 (*Grapta*); Kirb., Syn. Cat. Lep., 648 (*Nymphalis*); Scudd., Syst. Rev., 10; Boisd.-Le C., Lép. Am. Sept., 188, pl. 50, figs. 5–6 (*Vanessa*).

Grogne Fabr., Mant. Ins., 2, 50 (*Papilio*).

L-ARGENTEUM Scudd.

Northern half of the United States, east of and including the Mississippi Valley, extending northward nearly to the Arctic Ocean, but not invading the barren lands.

Food-plants: Currant, wild gooseberry, elm.

The form *l-argenteum* differs from the typical form figured by Kirby in having the hind wings much darker above, though by no means to the extent that *umbrosa* differs from *Fabricii* in the species *interrogationis*.

28. EUGONIA *Hübner* (1816).

Type: Papilio polychloros *Linn.*

80. **j. album** *Boisd.-Le C.*, Lép. Am. Sept., 185, pl. 50, figs. 1–2 (*Vanessa*); Lintn., Proc. Ent. Soc. Phil., 3, 58. (*Grapta*); Scudd., Syst. Rev., 11 (*Nymphalis*).

urticae Harr. (nec. Linn.), Hitch., Rep. 1st Ed., 590 (*Vanessa*).

vau-album (pars) Kirb., Syn. Cat. Lep., 184 (*Vanessa*).

East of the Rocky Mountains, from Okkak, Labrador and Great Slave Lake, to northernmost United States, occasionally as far south as Philadelphia (mountains (?) of Cuba).

81. **californica** *Boisd.*, Ann. Soc. Ent. France, [2] 10, 306 (*Vanessa*); Kirb., Syn. Cat. Lep., 648 (*Nymphalis*).

California; Oregon.

Food-plant: *Ceanothus.*

29. AGLAIS *Dalman* (1816).

Type: Papilio urticae *Linn.*

82. **Milberti** *God.*, Encycl. Méth., 9, 307 (*Vanessa*); Kirb., Syn. Cat. Lep., 648 (*Nymphalis*); Boisd.-Le C., Lép. Am. Sept., 187, pl. 50, figs. 3–4 (*Vanessa*); Scudd., Syst. Rev., 21.

furcillata Say, Amer. Entom., 2., pl. 27 (*Vanessa*).

urticae Emm. (nec Linn.), Agric. N. Y., 5, 209 (*Vanessa*).

Across the Continent to Great Slave Lake to northernmost United States, occasionally as far south as Philadelphia; Colorado.

Food-plant: *Urtica dioica*, etc.

30. PAPILIO *Linné* (1758).

Type: Papilio Antiopa *Linn.*

83. **Antiopa** *Linn.*, Syst. Nat., Ed. 10, 476; Latr., Hist. Nat. Crust. et Ins., 14, 83, pl. 105, fig. 1 (*Nymphalis*); Dalm., Kongl. Vetensk. Acad. Handl., 1816, 64 (*Aglais*); Hübn., Verz. Schmett., 37 (*Eugonia*); Ochs. Schmett. Eur., 4, 17 (*Vanessa*); Hübn., Verz. Eur. Schmett., 2 (*Hamadryas angulata*); Boisd.-Le C., Lép. Am. Sept., 173 (*Vanessa*).
Morio Retz., Gen. Sp. Ins., 31 (*Papilio*).
HYGIAEA Heyd, Verz. Eur. Schmett., 7 (*Vanessa*) suff. aberr.
Lintneri Fitch, Trans. N. Y. St. Agric. Soc., 1856, 485 (*Vanessa*).

Whole Northern Continent (excepting within arctic circle), as far south as the Gulf of Mexico (Mexico).

Food-plants: Willows, poplars, elms.

31. VANESSA *Fabricius* (1807).

Type: Papilio Atalanta *Linn.*

84. **Atalanta** *Linn.*, Syst. Nat., Ed. 10, 478 (*Papilio*); Latr., Hist. Nat. Crust. et Ins., 14, 86 (*Nymphalis*); Dalm., Kongl. Vetensk. Acad. Handl., 1816, 55 (*Aglais*); Hübn., Verz. Schmett., 33 (*Pyrameis*); Lam., Anim. sans Vert., 4, 29 (*Libythea*); Hübn., Verz. Eur. Schmett., 2 (*Hamadryas decora*); Harr., Hitch. Rep., 1st Ed., 390 (*Cynthia*); Fabr., Ill. Mag. Ins., 6, 281; Boisd.-Le C., Lép. Am. Sept., 175.
Amiralis Retz., Gen. Sp. Ins., 31 (*Papilio*).

Newfoundland; Nova Scotia; Southern Canada and southward over the United States from Atlantic to Pacific (Cuba, Mexico, Europe, and Mediterranean district).

Food-plants: *Urtica* (all species), *Humulus lupulus, Boehmeria cylindrica, Parietria debilis.*

85. **Huntera** *Fabr.*, Syst. Ent., 499 (*Papilio*); Sm.-Abb., Lep. Ins. Geo., pl. 9 (*Papilio*); Harr., Hitchc., Rep., 1st Ed., 590 (*Cynthia*); Doubl.-Hewits., Gen. Diurn. Lep., 205 (*Pyrameis*); Gey. in Hübn., Samml. Exot. Schmett., 3.
Hunteri Hübn., Verz. Schmett., 33.
virginiensis Kirb., Syn. Cat. Lep., 186 (*Pyrameis*).
Iole Cram., Pap. Exot., 1, 17, pl. 12, figs. E F (*Papilio*).

Nova Scotia; Southern Canada and United States south of British Possessions, from Atlantic to Pacific (Cuba, Mexico, Guatemala).

Food-plants: *Gnaphalium polycephalum, G. pupureum, G. obtusifolium, Antennaria plantaginifolia, Myosotis.*

86. **cardui** *Linn.*, Syst. Nat., 10th Ed., 475 (*Papilio*); Latr., Hist. Nat. Crust. et Ins., 14, 87 (*Nymphalis*); Fabr., Ill. Mag. Ins., 6, 281 (*Cynthia*); Dalm., Kongl. Vetensk. Acad. Handl., 1816, 65 (*Aglais*); Lam., Anim. sans Vert., 4, 29 (*Libythea*); Hübn., Verz. Eur. Schmett., 3 (*Hamadryas decora*); Doubl.-Hewits., Gen. Diurn. Lep., 205 (*Pyrameis*); Ochs., Schmett. Eur., 4, 16, 127; Boisd.-Le C., Lép. Am. Sept., 178.
Carduelis Cram., Pap. Exot., 1. 40, pl. 26, figs. E F (*Papilio*).

Labrador; Newfoundland and Southern British Possessions, southward over the whole United States (to Venezuela and the Antilles, Europe, Asia, Africa, Australia, Polynesia).

Food-plants: *Senecio cineraria, Cnicus benedictus, Cirsium, lanceolatum, C. arvense, Carduus nutans, Onopordium acanthium, Lappa major, Helianthus, Althaea rosea, Silybum Marianum* and *Malvaceae.*

87. **Carye** *Hübn.*, Samml. Exot. Schmett., 1 (*Hamadryas decora*); Doubl.-Hewits., Gen. Diurn. Lep., 205 (*Pyrameis*); Hübn., Verz. Schmett., 33.

Charie Blanch. in Gay, Chili 7, 26, pl. 2, fig. 5.

California (down the Pacific coast to Chili).

Food-plants: *Urtica and Malvaceae.*

82. JUNONIA *Hübner* (1816).

Type: Papilio Lavinia *Cram.*

88. **Coenia** *Hubn.*. Samml. Exot. Schmett., 2; Boisd.-Le C., Lép. Am. Sept., 182, pl. 49, figs. 1–4 (*Vanessa*).

Orythia Sm.-Abb., Lep. Ins. Geo., 1, 15, pl. 8 (*Papilio*).

Larinia (pars) God., Encycl. Méth., 9, 318 (*Vanessa*).

Lavinia Harr. (nec Cram.), Hitchc. Rep., 1st Ed., 590 (*Cynthia*).

United States, excepting the northernmost States; Bermudas (Cuba).

Food-plants: *Linaria canadensis, Gerardia purpurea, Plantago lanceolata.*

83. ANARTIA *Hübner* (1816).

Type: Papilio Jatrophae *Linn.*

89. **Jatrophae** *Linn.*, Mus. Ulr. Reg., 289 (*Papilio*); God., Encycl. Méth., 9, 297 (*Vanessa*); Hübn., Samml. Exot. Schmett., 1 (*Hamadryas decora*); Ib., Verz. Schmett., 33.

Iatrophae Doubl.-Hewits., Gen. Diurn. Lep., 216.

Texas; Southern Florida (and southward including Antilles, to Brazil).

84. DIAETHRIA *Billberg* (1820).

Type: Papilio Clymena *Cram.*

90. ***Clymena** *Cram.*, Pap. Exot. 1, pl. 24, figs. E F (*Papilio*); Hübn., Verz., 41 (*Callicore*).

Clymenus Fabr., Ent. Syst., 3, 43 (*Papilio*).

S. Florida (Brazil, Guiana).

The identification of this species is imperfect, resting upon the following statement of Doubleday (Gen. Diurn. Lep., 238). "The only evidence I have obtained of the occurrence of any species so far north as East Florida, is a drawing shown to me by Dr. Bachman, of Charleston, S. C., of a species, which, as far as can be determined without comparison of specimens, is *Callicore Clymenus.* This drawing was made by Dr. Leitner, from a specimen which he took during his journey to the southern parts of East Florida in 1836. Should this insect prove to be a distinct species, I trust that the entomologist who may describe it, will name it after the unfortunate discoverer, who fell a victim in the following year to Indian treachery, a fate which, but for a fortunate detention on the St. John's, I should probably have shared with him."

85. MESTRA *Hübner* (1822–26).

Type: Mestra Hypermestra *Hübn.*

91. Amymone *Ménétr.*, Enum. An. Mus. Petrol., 1, 123, pl. 9, fig. 6 (*Cystineura*).
Amymone Kirb., Syn. Cat. 217 (*Cystineura*).
Dorcas Edw. (nec Fabr.), Syn. N. Am. Butt., 18 (*Cystineura*).
Texas (Nicaragua).

86. AMPHLICHLORA *Felder* (1861).

Type: Papilio Feronia *Linn.*

92. * Fornax *Hübn.*, Exot. Schmett. 2 (*Ageronia*); Feld., Neues Lep., 19.
Texas (and southward, at least through Central America).

93. * Feronia *Linn.*, Syst. Nat., Ed. 10, 473 (*Papilio*); Hübn., Exot. Schmett., 1 (*Hamadryas decora*); Ib., Verz. Schmett., 42 (*Ageronia*); Feld., Neues Lep., 19.
Texas (and southward to Brazil).

87. TIMETES *Boisduval* (1836).

Type: Tymetes Merops *Boisd.*

94. Coresia *God.*, Encycl. Méth., 9, 359 (*Nymphalis*); Blanch., Hist. Nat. Ins., 3, 447 (*Megalura*); Doubl.-Hewits., Gen. Diurn. Lep., 263 (*Timetes*).
Zerynthia Hübn., Samml. Exot. Schmett., 2.
Sylla Perty, Del. An. Art., 151, pl. 29, figs. 2, 2 b (*Papilio*).
Texas; New Mexico (to Brazil).

88. ATHENA *Hübner* (1816).

Type: Papilio Thetys *Fabr.*

95. Peleus *Sulz.*, Gesch. Ins., pl. 13, fig. 4 (*Papilio*); Kirb., Syn. Cat., 222 (*Megalura*).
Thetys Fabr., Gen. Ins., 264 (*Papilio*).
Thetis God., Encycl. Méth., 9, 358 (*Nymphalis*).
Petreus Cram., Pap. Exot., 1, pl. 87, figs. D E (*Papilio*).
Eleucha Edw. (nec *Eleuchea* Hübn.), Syn. N. Am. Butt., 22 (*Timetes*).
Florida (to Brazil).
Food-plant: *Anacardium occidentale.*

Mr. Edwards has shown me a drawing of this species made from a specimen taken at Apalachicola by Dr. Chapman.

96. **Pellenis** *God.*, Encycl. Méth., 9, 359 (*Nymphalis*).
Eleuchea Hubn., Samml. Exot. Schmett., 2 (nec Zutr.) (*Marpesia*).
Eleucha Doubl.-Hewits., Gen. Diurn. Lep., 263, pl. 33, fig. 3 (*Timetes-Marpesia*).
? Petreus Edw. (nec Cram.), Syn. N. Am. Butt., 22 (*Timetes*).
Texas; New Mexico (Antilles).

My knowledge of this species within our limits is based on a drawing sent by Mr. Belfrage to Mr. Edwards; this does not accord sufficiently well with the figures of Hübner and of Doubleday, to make us positive in its determination; in particular the mesial band of the primaries bends above the cell in the figure by Belfrage; below it in the others quoted. The *Eleuchea* of Hübner's Sammlung is totally distinct from the *Eleuchea* of his earlier Zuträge.

39. VICTORINA *Blanchard* (1840).

Type: Papilio Stelenes *Linn.*

97. ***Stelenes** *Linn.*, Syst. Nat., Ed. 10, 465 (*Papilio*); God., Encycl. Méth., 9, 378 (*Nymphalis*); Doubl.-Hewits., Gen. Diurn. Lep., 265.
Sthenelus Linn., Syst. Nat., Ed. 12, 5, 2, 750 (*Papilio*).
Sthenele Hübn., Verz. Schmett., 43 (*Metamorpha*).
Steneles Blanch., Hist. Nat. Ins., 3, 447.
Lavinia Fabr., Ent. Syst., 3, 1, 22 (*Papilio*).
New Mexico (Central America to Brazil, Antilles).

VII. Tribe: DRYADES *Borkhausen* (1788).

[Papiliones nobiles Wien. Verz. 1775; Argynnites (pars) Blanch. Brullé, 1840.]

40. COLAENIS *Hübner* (1816).

Type: Papilio Julia *Fabr.*

98. ***Julia** *Fabr.*, Syst. Ent., 509 (*Papilio*); Hübn., Exot. Schmett., 1 (*Dryas phalerata*) God., Ency. Méth., 9,244 (*Cethosia*); Hübn. Verz. Schmett., 32.
Alcionea Cram., Pap. Exot., pl. 215, figs. A. F. G. (*Papilio*).
Alcyonea Herbst., Natursyst., Schmett., pl. 67 figs. 5–7 (*Papilio*).
Texas (and southward to Brazil).

99. **Delila** *Fabr.*, Syst. Ent., 510 (*Papilio*); God., Encycl. Méth., 9, 244 (*Cethosia*) Hübn., Verz. Schmett., 32.
Cillene Cram., Pap. Exot., 3, pl. 215 figs. D. E. (*Papilio*).
Texas (Central America ? ; Jamaica; Guiana).

I know this from the United States only by a drawing sent Mr. Edwards by Mr. Belfrage.

41. AGRAULIS *Boisd.-Le C.* (1833-4).

Type: Papilio vanillae *Linn.*

100. vanillae *Linn.*, Syst. Nat., Ed. 10, 482 (*Papilio*); Sm. Abb., Lep. Ins. Geo., 1, pl. 12 (*Papilio*); Hübn. Verz., 31 (*Dione*); God., Encycl. Mèth., 9, 262 (*Argynnis*); Boisd.-Le C., Lép. Am. Sept., 143, pl. 42, figs. 1–4.

passiflorae Fabr., Ent. Syst., 3, 60 (*Papilio*).

Southern third of the United States east of Rocky Mountains (and southward to Brazil, including the Antilles).

Food-plants: *Passiflora caerulea, P. incarnata.*

42. EUPTOIETA *Doubleday* (1848).

Type: Papilio Claudia *Cram.*

101. Claudia *Cram.*, Pap. Exot., 1, pl. 69, figs. E F (*Papilio*); Hübn., Samml. Exot. Schmett., 1 (*Dryas fucata*); Hübn., Verz. Schmett., 30 (*Brenthis*); Doubl., Cat. Lep. Brit. Mus., 1, 67 (*Argynnis*); Doubl.-Hewits, Gen. Diurn. Lep., 170.

Clausius Herbst, Natursyst. Ins. Schmett., 9, 189, pl. 257, figs. 3–4 (*Papilio*).

Daunius Ib., ib. 9, 184, pl. 256, figs. 1–2 (*Papilio*).

Columbina God. (nec Fabr.), Encycl. Méth., 9, 260 (*Argynnis*); Boisd.-Le C., Lép. Am. Sept., 153, pl. 44, figs. 1–4 (*Argynnis*).

United States (except the northernmost portions) east of the Great Plains; Southern Ontario; Colorado; New Mexico (southward to Honduras and Guatemala? Cuba).

Food-plants: *Podophyllum peltatum, Passiflora incarnata, Viola tricolor, Turnera ulmifolia, Desmodium Sedum, Portulaca.*

43. SPEYERIA *Scudder* (1872).

Type: Papilio Idalia *Drury.*

102. Idalia *Drury*, Ill. Nat. Hist., 1, pl. 13, figs. 1–3 (*Papilio*); God., Encycl. Méth., 9, 263, pl. 37, figs. 1, 1 bis. (*Argynnis*); Boisd.-LeC., Lép. Am. Sept., 147, pl. 43, figs. 1–2 (*Argynnis*), Scudd., Syst. Rev., 23; *Cybele* (pars.) Hübn., Verz. Schmett., 31 (*Acidalia*).

ASTARTE Fish., Proc. Acad. Nat. Sc. Phil., 1858, 179, pl. 2 (*Argynnis*)—suff. aberr.

Ashtaroth Ib., ib. 1859, 352 (*Argynnis*).

Food-plant: *Sericocarpus conyzoides.*

44. SEMNOPSYCHE *Scudder.*

Type: Papilio Diana *Cram.*

Differs from Argynnis in the more arched costa of the fore wings, the excised outer margin of the same, especially in the male, the legs excised, inner margin of the hind wings next the anal angle, the longer legs, but comparatively shorter basal joint of tarsi, the smaller and more pedunculated pad and rather stouter claws, besides in some points in the neuration of the fore wing and the general pattern of coloration.

103. Diana *Cram.*, Pap. Exot., 2, pl. 98, figs. D E (*Papilio*); God., Encycl. Méth., 9, 257 (*Argynnis*); Say, Am. Ent., pl. 17 (*Argynnis*); 1 Edw., Butt. N. Am., 1, pl. Argynnis1, figs. 1–4; Suppl., pl. Argynnis 1, figs. 1–4 (*Argynnis*); Boisd.-LeC., Lép. Am. Sept., 149 (*Argynnis*).
Southern Alleghanies; also, fide Say, "Arkansaw" and Missouri.
Food plants: *Viola Vernonia.*

45. ARGYNNIS *Fabricius* (1807).

Type: Papilio Aglaja *Linn.*

104. Nokomis *Edw.*, Proc. Acad. Nat. Sc. Phil., 1862, 221; Herr.-Schaeff., Prodr. Syst. Lep., 1, 91 (*Brenthis*); Edw. Butt. N. Am. 1, pl. Argynnis 4, figs. 1–4.
Montana; Idaho.

105. *Nitocris *Edw.*, Trans. Am. Ent. Soc., 5, 15.
Arizona.

106. Leto *Behr*, Proc. Cal. Acad. Nat. Sc., 2, 173; Edw., Butt. N. Am., 1, pl. Argynnis 10, figs. 1–4; Suppl., pl. Argynnis 10, figs. 1–4.
Cybele Boisd. (nec Fabr.), Ann. Soc. Ent. Belg., 12, 60.
California; Oregon.

107. Cybele *Fabr.*, Syst. Ent. 516 (*Papilio*); God., Encycl. Méth., 9, 263; Edw., Butt. N. Am., 1, pl. Argynnis 2, figs, 1–4; Boisd.-Le C., Lep. Am. Sept., 151, pl. 45, figs. 3–4.
Daphnis Cram., Pap. Exot., 1 pl. 57, figs. E F (*Papilio*).
Aphrodite Humph.-Westw. (nec Fabr.), Brit. Butt., 3d Ed., 46, pl. 12, figs. 4–5.
Southern Canada and northern United States, as far as Virginia, east of Plains; most abundant southward.
Food-plant: Violets.

108. Aphrodite *Fabr.*, Mant. Ins., 2, 62 (*Papilio*); God., Encycl. Méth., 9, 264; Edw., Butt. N. Am., 1, pl. Argynnis 3, figs. 1–4.
Daphnis Mart., Psyche, pl. 3, No. 7, pl. 4, No. 9 (*Papilio*).
Same distribution as A. Cybele, but most abundant northward; Colorado.
Food-plant: Violets.

It seems to me probable that the *Atlantis* of Edwards is the true *Aphrodite* of Fabricius, but as it is quite impossible to be certain of it, the names ought to stand as given by Mr. Edwards, who first clearly distinguished the species in this difficult group. The species were still confounded in the British Museum after the publication of Butler's Fabrician butterflies (see p. 101); the Argynnis from Nova Scotia, called in that work *Aphrodite*, being Edwards' *Atlantis*.

109. Halcyone *Edw.*, Butt. N. Amer., 1, pl. Argynnis 9.

Colorado.

110. Edwardsii *Reak.*, Proc. Ent. Soc. Phil., 6, 137; Edw., Butt. N. Am., 1, pl. Argynnis 11, figs. 1–4.

Colorado; California; Montana.

111. nevadensis *Edw.*, Trans. Am. Ent. Soc., 3, 14; Ib., Butt. N. Am., 1, pl. Argynnis 14, figs. 1-4.

Nevada; Montana.

112. Meadii *Edw.*, Trans. Am. Ent. Soc., 4, 67.

Colorado.

Is this distinct from Edwardsii?

113. Coronis *Behr.*, Edw., Proc. Ent. Soc. Phil., 3, 435.

Juba Boisd., Ann. Soc. Ent. Belg., 12, 60.

California.

Mr. Edwards, who has received from Behr and Boisduval specimens of their species, declares them identical; Dr. Boisduval is of the same opinion.

114. Bischoffii *Edw.*, Trans. Am. Ent. Soc., 3, 189.

Alaska to British Columbia.

Can this be a local race of Eurynome?

115. Eurynome *Edw.*, Trans. Am. Ent. Soc., 4, 66.

Astarte Edw. (nec Doubl.), Proc. Ent. Soc. Phil., 1, 221 (nec 3, 435).

Oregon; California; Colorado; Wyoming; Utah.

Is this distinct from Coronis?

116. Atlantis *Edw.*, Proc. Acad. Nat. Sc. Phil., 1862, 54; Ib., Butt. N. Am., 1, pl. Argynnis 5, figs. 1–3.

Aphrodite Butl. (nec Fabr.), Cat. Fabr. Lep., 108.

North-eastern United States; Canada; north to Hudson's Bay and west to Rocky Mountains; Colorado.

Food-plant: Violets.

117. Behrensii *Edw.*, Trans. Am. Ent. Soc., 2, 370; Ib., Butt. N. Am., 1, pl. Argynnis 12, figs. 1–4.

California.

118. Bremnerii *Edw.*, Trans. Am. Ent. Soc., 4, 63; Ib., Butt. N. Am., 2, pl. Argynnis 4, figs. 1–4.

San Juan Island.

Is this distinct from Callippe?

119. Callippe *Boisd.*, Ann. Soc. Ent. Fr., [2] 10, 302; Edw., Butt. N. Am. 1, pl. Argynnis 6, figs. 1–4.

California.

120. Rhodope *Edw.*, Trans. Am. Ent. Soc., 5, 13; Ib., Butt. N. Am., 2, pl. Argynnis 6, figs. 1–4.

British Columbia.

121. Adiante *Boisd.*, Ann. Soc. Ent. Belg., 12, 61.
Adiaste Boisd. Ms. in Edw., Proc. Ent. Soc. Phil., 3, 436.
California.

122. Zerene (pars) *Boisd.*, Ann. Soc. Ent. Fr., [2] 10, 303; Edw., Butt. N. Am., 1, pl. Argynnis 13, figs. 1–4.
Hydaspe Boisd., Ann., Soc. Ent. Belg., 12, 60.
California.

123. monticola *Behr*, Proc., Cal. Acad. Sc., 3, 84; Edw., Butt. N. Am., 1, pl. Argynnis 8, figs. 1–4.
Zerene (pars) Boisd., Ann. Soc. Ent. Fr., [2] 10, 303.
California; Oregon.

124. rupestris *Behr*, Proc. Cal. Acad. Sc., 3, 84.
California.

125. inornata *Edw.*, Trans. Am. Ent. Soc., 4, 64.
California.
It seems doubtful whether this is distinct from *rupestris*.

126. Hesperis *Edw.*, Proc. Ent. Soc. Phil., 2, 502; Edw., Butt. N. Am., 1, pl. Argynnis 7, figs. 1–3.
Colorado.

127. *Mormonia *Boisd.*, Ann. Soc. Ent. Belg., 12, 58.
montivaga Behr in Edw., Proc. Ent. Soc. Phil., 3, 435 "*Argynnis* No. 5" (preoccupied; see No. 127.)
Mountains of California.
Mr. Edwards has received from their authors specimens of *Mormonia* and *Montivaga* (Argynnis No. 5 Behr) and declares them identical. Dr. Boisduval thinks *Mormonia* and *Egleis* (=*Montivaga* or Argynnis No. 4 Behr) are only varieties of one species.

128. *montivaga *Behr*, Proc. Cal. Acad. Sc., 3, 84, "Argynnis No. 4" (see No. 126.)
Egleis Boisd., Ann. Soc. Ent. Belg., 12, 59.
Astarte Edw. (nec Doubl.), Proc. Ent. Soc. Phil., 3, 435 (nec 1, 221).
California.

129. *Irene *Boisd.*, Ann. Soc. Ent. Belg., 12, 60.
California.

46. BRENTHIS *Hübner* (1816).

Type: Papilio Hecate *Wien. Verz.*

180. **Myrina** *Cram.*, Pap. Exot., 2, pl. 189, figs. B C (*Papilio*); Hübn., Verz. Schmett., 30 (*Argynnis*); Say, Am. Ent., 3, pl. 46 (*Melitaea*); Herr.-Schaeff., Prodr. Lep., 1, 73; Boisd.-LeC., Lép. Am. Sept., 155, pl. 45, figs. 1–2 (*Argynnis*).

Myrinus Herbst, Natursyst. Ins., Schmett., 9, 178, pl. 255, figs. 3–4 (*Papilio*).

Myrissa God., Encycl. Méth., 9, 266, 806 (*Argynnis*).

Northern half of United States and southern parts of British America, east of Rocky Mountains; California; Colorado.

Food-plants: Violets, wild and cultivated.

181. **Triclaris** *Hübn.*, Exot. Schmett., 2 (*Argynnis*).

Ossianus Boisd. (nec Herbst), Icon. Lép., pl. 19, figs. 1–3 (*Argynnis*); Boisd.-LeC., Lép. Am. Sept., 157 (*Argynnis*).

Labrador; Colorado; Utah; Wyoming.

182. **Helena** *Edw.*, Trans. Am. Ent. Soc., 3, 268 (*Argynnis*).

Colorado.

183. ***Morrisii** *Reak.*, Proc. Acad. Nat. Sc. Phil., 1866, 39.

California, Oregon.

184. ***Nenoquis** *Reak.*, Proc. Acad. Nat. Sc. Phil., 1866, 40.

California; Oregon.

Is this distinct from the European *Dia?*

185. **Chariclea** *Schneid.*, Fuessl. Neuest. Mag., 5, 588 (*Papilio*); Ochs., Schmett. Eur., 4, 114 (*Argynnis*); Herr.-Schaeff., Prodr. Syst. Lep., 1, 91; Boisd.-LeC., Lép. Am. Sept., 161 (*Argynnis*).

arctica Zett., Ins. Lapp., 899 (*Argynnis*).

Boisduvalii Somm. in Boisd., Icon. Lép., 1, 98, pl. 20 figs. 5–6 (*Argynnis*).

Greenland; British Possessions east of Rocky Mountains, almost to southern boundaries; Rocky Mountain district as far south as Colorado (northernmost Europe).

186. ***Tarquinius** *Curt.*, Ross Voy. App. 68 (*Melitaea*).

Polar regions of America.

The description by Curtis does not agree with any of the polar species known to me; it has generally been placed as a synonym of *Freija*, but it certainly does not agree with that.

187. **Freija** *Thunb.*, Diss. Ins. Suec., 2, 34, figs. 14, 14 (*Papilio*); Hubn., Verz. Schmett., 30 (*Argynnis*).

Freya Hübn., Cur. Schmett., figs. 55–6 (*Papilio*); Herr.-Schaeff., Prodr. Syst. Lep., 1, 91.

Dia lapponica Esp., Eur. Schmett., 1, pl. 97, fig. 3 (*Papilio*).

British Possessions, excepting southernmost parts; Rocky Mountain district as far south as Colorado; (northernmost Europe and Asia.)

138. Montinus *Scudd.*, Bost. Journ. Nat. Hist., 7, 626, pl. 14, fig. 1 (*Argynnis*); Ib., Syst. Rev. Butt., 25.
White Mountains of New Hampshire.

139. polaris *Boisd.*, Ind. meth., 15 (*Argynnis*); Hübn., Eur. Schmett., figs. 1016–1019 (*Papilio*); Boisd.-LeC., Lép. Am. Sept., 159 (*Argynnis*).
Northern Greenland and Northern Labrador.

140. Frigga *Thunb.*, Diss. Ins. Suec., 2, 33 (*Papilio*); Hübn., Verz. Schmett., 30 (*Argynnis*); Herr.-Schaeff., Prodr. Syst. Lep., 1, 91.
Labrador; Colorado; (northernmost Europe and Asia.)

141. Bellona *Fabr.*, Syst. Ent., 517 (*Papilio*); God., Encycl. Méth., 9, 271 (*Argynnis*); Herr.-Schaeff., Prodr. Syst. Lep., 1, 73; Boisd.-LeC., Lép. Am. Sept., 164, pl. 45, figs. 5–6 (*Argynnis*).
Myrina Matt, (nec Cram.) Psyche, pl. 1, Nos. 2–3 (*Papilio*).
Northern half of United States; southern parts of British America, east of Rocky Mountains; California; Colorado.
Food-plants: Violaceae, wild and cultivated; grass.

142. Epithore *Boisd.* in Edw., Proc. Ent. Soc. Phil. 2, 504 (*Argynnis*).
Antithore Boisd. in Behr, Proc. Cal. Acad. Nat. Sc., 3, 85, undescribed (*Argynnis*).
California.
It is questionable whether *Melitaea Astarte* Doubl. is an American species and consequently I have not quoted it. It seems probable that it belongs to this group, though the markings of the under surface are said to be peculiar.

VIII. Tribe: HAMADRYADES *Borkhausen* (1788).

[Papiliones variegati Wien. Verz., 1775; Argynnites (pars) Blanch.-Brullé, 1840; Melitaeidae Newm., 1871.]

47. EUPHYDRYAS *Scudder* (1872).

Type: Papilio Phaeton *Drury*.

143. Phaeton *Drury*, Ill. Nat. Hist., 1, 42, pl. 21, figs. 3–4 (*Papilio*); Boisd.-Le C., Lép. Am. Sept., 167, pl. 47, figs. 1–2 (*Melitaea*); Scudd., Syst. Rev. Butt., 27.
Phaetaena Hübn., Verz. Schmett., 28 (*Melitaea*).
Phaetontea God., Encycl. Méth., 9, 288, pl. 38, figs. 3, 3 bis (*Argynnis*).
Phaedon Herr.-Schaeff., Prodr. Syst. Lep., 1, 79 (*Melitaea*).
Southern Canada and Northern U. S., east of Mississippi Valley.
Food-plants: *Chelone glabra, Lonicera ciliata.*

48. LEMONIAS *Hübner* (1806).

Type: Papilio Maturna *Linn.*

DIVISION 1.

144. Chalcedona *Boisd.* in Doubl.-Hewits., Gen. Diurn. Lep., pl. 23, fig. 1 (*Melitaea*).

Chalcedon Edw., Proc. Ent. Soc. Phil., 1, 222 (*Melitaea*); Ib., Butt. N. Am., 1, p. Melitaea 1, figs. 1–4 [besides larva and pupa unnumbered] (*Melitaea*).

California; Oregon; Colorado.

Food-plants: *Scrophularia, marylandica, Diplacus glutinosus, Lonicera. Mimulus luteus, Castelejia.*

145. *Cooperi *Behr*, Proc. Cal. Acad. Nat. Sc., 3, 90 (*Melitaea*).
California.
Food-plant: *Scrophularia.*

DIVISION 2.

146. Anicia *Doubl.-Hewits.*, Gen. Diurn. Lep., 179 (*Melitaea*).
California; Nevada; Colorado.

EDITHA *Boisd.*, Ann. Soc. Ent. Fr., [2] 10, 304 (*Melitaea*).
Anicia Edw., Proc. Ent. Soc. Phil., 1, 223 (*Melitaea*).

Hills and elevated country.

NUBIGENA *Behr*, Proc. Cal. Acad. Nat. Sc., 3, 91 (*Melitaea*).
Anicia Doubl.-Hewits., Gen. Diurn. Lep., pl. 23, fig. 2 (*Melitaea*).

Above 10,000 feet.
Food-plants: *Erodium cicutarium, Trifolium, Viola.*

147. Helvia *Scudd.*, Proc. Bost. Soc. Nat. Hist., 12, 405 (*Melitaea*).
Alaska.

148. Quino *Behr*, Proc. Cal. Acad. Nat. Sc., 3, 90 (*Melitaea*).
Southern California.

DIVISION 3.

149. Hoffmanii *Behr*, Proc. Cal. Acad. Nat. Sc., 3, 89 (*Melitaea*).
California; Nevada; Colorado—high land.

150. Helcita *Boisd.*, Ann. Soc. Ent. Belg., 12, 55 (*Melitaea*).
California.

Mr. Edwards, who has received specimens of this species from Boisduval, thinks it may be only a variety of *Palla*. I have a fragmentary specimen determined by comparison with Boisduval's types and it seems to me distinct.

151. Palla *Boisd.*, Ann. Soc. Ent. Fr., [2], 10, 305 (*Melitaea*).
California—low country.
Food-plant: *Castelejia breviflora.*

152. ***Pola** *Boisd.*, Ann. Ent. Soc. Belg., 12, 56 (*Melitaea*).
Southern California.

153. ***Whitneyi** *Behr*, Proc. Cal. Acad. Nat. Sc., 3, 88 (*Melitaea*).
California—alpine.

154. **Gabbii** *Behr*, Proc. Cal. Acad. Nat. Sc., 3, 89 (*Melitaea*).
sonorae Boisd., Ann. Soc. Ent. Belg., 12, 56 (*Melitaea*).
Southern California—mountains.

155. ***Sterope** *Edw.*, Trans. Am. Ent. Soc., 3, 190 (*Melitaea*).
Oregon.

Mr. Edwards places this in the previous group in his Synopsis, but from his description, it would seem to belong rather to this division.

156. ***Acastus** *Edw.*, Trans. Am. Ent. Soc., 5, 16 (*Melitaea*).
Montana; Nevada; Utah.

49. THESSALIA *Scudder*.

Type: Melitaea Leanira *Feld.*

Differs from Lemonias, to which (and especially to the American representatives of which) it is most nearly allied in its somewhat longer antennae, hind tibiae longer in comparison with the hind femora, the greater separation of the costal and subcostal nervures of the fore wings, other points of neuration and the more arched outer border of the hind wings.

157. **Leanira** *Boisd.* in Feld., Wien. Ent. Monatschr., 4, 106 (*Melitaea*).
California.
Food-plant: *Cordylanthus pilosus.*

158. **Theona** *Mén.*, Enum. Anim. Mus. Petrop., 1, 86, pl. 2, fig. 5 (*Melitaea*).
Southern California (Nicaragua; Guatemala).

159. ***Thekla** *Edw.*, Trans. Am. Ent. Soc., 3, 191.
Southern California.

50. SCHOENIS *Hübner* (1816).

Type: Papilio Cinxia *Linn.*

160. **Minutus** (*minuta*) *Edw.*, Proc. Acad. Nat. Sc., 1861, 161 [pl. 2, figs. 2–3 ined ?] (*Melitaea*).
Texas.

161. ***Arachne** *Edw.*, Trans. Am. Ent. Soc., 2, 372 (*Melitaea*).
Colorado.

Mr. Edwards thinks this may prove identical with *Minuta*.

51. CINCLIDIA *Hübner* (1816).

Type: Papilio Phoebe *Wien. Verz.*

162. Harrisii *Scudd.*, Proc. Ess. Inst., 3, 167 [Syn. excl.] (*Melitaea*); Kirb., Syn. Cat. Lep., 174 [Syn. excl.] (*Phyciodes*); Scudd., Syst. Rev. Butt., 27 (*Limnaecia*).

Southern Canada and Northern United States east of Great Plains.

Food-plant: *Diplopappus umbellatus.*

52. CHARIDRYAS *Scudder* (1872).

Type: Melitaea Nycteis *Doubl.*

163. Ismeria *Boisd.-LeC.*, Lép. Am. Sept., 168, pl. 46 (*Melitaea*).

Gorgone Hübn., Samml. Exot. Schmett. 1, figs. 1–2 (nec 3–4) (*Dryas reticulata*).

Carlota Reak., Proc. Ent. Soc. Phil., 6, 141 (*Eresia*).

Nycteis Edw. (nec. Doubl.), Proc. Acad. Nat. Sc., 1861, 161 (*Melitaea*).

Middle and Southern United States, from the Atlantic to the Rocky Mountains; Colorado; Montana.

Food-plant: *Helianthus trachelifolius.*

164. Nycteis *Doubl.*, Gen. Diurn. Lep., pl. 23, fig. 3 (*Melitaea*); Feld., Neues Lep., 49 (*Eresia*); Kirb., Syn. Cat. Lep., 173 (*Phyciodes*); Scudd., Syst. Rev. Butt., 26.

Nyctis Boisd., Ann. Soc. Ent. Belg., 12, 53 (*Melitaea*).

Ismeria Harr. (nec Boisd.-LeC.), Ins. Inj. Veg., 3d Ed., 288 (*Melitaea*).

Harrisii Edw. (nec Scudd.) Can. Ent., 2, 163 (*Melitaea*).

Oenone Scudd., Proc. Ess. Inst., 3, 166 (*Melitaea*).

Canada and Northern half of the U. S. east of Rocky Mts.; Colorado.

Food-plants: *Helianthus divaricatus, Actinomeris squarrosa, A. helianthoides.*

53. PHYCIODES *Hübner* (1816).

Type: Papilio Cocyta *Cram.*

165. Vesta *Edw.*, Trans. Am. Ent. Soc., 2, 371 (*Melitaea*); Ib., Syn. N. A. Butt., 18.

Texas.

166. pulchella *Boisd.*, Ann. Soc. Ent. Fr. [2] 10, 306 (*Melitaea*).

Mylitta Edw., Proc. Acad. Nat. Sc. Phil., 1861, 160 (*Melitaea*).

? *collina* Behr, Proc. Cal. Acad. Nat. Sc., 3, 86 (*Melitaea*).

Epula Boisd., Ann. Soc. Ent. Belg., 12, 54 (*Melitaea*).

Texas; Kansas; California (Mexico).

Food-plants: *Carduus sp.*

Mr. Edwards has received specimens of *Epula* from Boisduval and considers it identical with his own *Mylitta.*

167. ***Callina** *Boisd.*, Ann. Soc. Ent. Belg., 12, 54 (*Melitaea*).
Sonora (Mexico).

168. **Orseis** *Edw.*, Trans. Am. Ent. Soc., 3, 206.
California to Gulf of Georgia.

169. **Frisia** *Poey*, Cent. Lép. Cuba, 2d Dec. (*Melitaea*); Ib., Mem. Soc. Econ. Hab. (2) 3, 125 (*Melithaea*); Herr.-Schaeff., Schmett., Cuba, 5 (*Eresia*); Kirb., Syn. Cat., 173.
Gyges Hewits., Exot. Butt., 3, pl. Eresia 6, figs. 45, 46 (*Eresia*).
S. Florida (Cuba).

170. **pallida** *Edw.*, Proc. Ent. Soc. Phil., 2, 505 (*Melitaea*); Kirb., Syn. Cat., 174.
Matà Reak., Proc. Ent. Soc. Phil., 6, 142 (*Eresia*).
Texas; Kansas; Colorado.
Matà Reakirt is placed as a synonym on the authority of Mr. Edwards.

171. ***picta** *Edw.*, Proc. Ent. Soc. Phil., 4, 201 (*Melitaea*); Ib., Syn. N. Am. Butt., 17.
Nebraska; Colorado.

172. ***Canace** *Edw.*, Trans. Am. Ent. Soc., 3, 206.
Southern California.
Is it distinct from *pratensis*?

173. **pratensis** *Behr.*
CAMPESTRIS Behr, Proc. Cal. Acad. Nat. Sc., 3, 86 (*Melitaea*).
pratensis Behr, Proc. Cal. Acad. Nat. Sc., 3, 86 (*Melitaea*); Kirb., Syn. Cat., 173.
Camillus Edw., Trans. Am. Ent. Soc., 3, 268.
Emissa Edw., Trans. Am. Ent. Soc. 3, 269.
MONTANA Behr, Proc. Cal. Acad. Nat. Sc., 3, 85 (*Melitaea*).
Orsa Boisd., Ann. Soc. Ent. Belg., 12, 55 (*Melitaea*).
California; Colorado.
Mr. Edwards has received from Drs. Boisduval and Behr specimens of *Orsa* and *montana*, and declares them identical.

174. **Tharos** *Drury*, Ill. Nat. Hist., 1, 43, pl. 21, figs. 5–6 (*Papilio*); Boisd.-Le C., Lép. Am. Sept., 170, pl. 47, figs. 3–5 (*Melitaea*); Steph., Ill. Brit. Ent. Haust, 1, 150 (*Eresia*); Kirb., Syn. Cat., 172.
Tharossa God., Encycl. Méth., 9, 289 (Agynnis).
Pharos Emm., Agric. N. Y., 5, 212, pl. 43, figs. 5–6 (*Melitaea*).
Morpheus Herbst, Natursyst. Ins. Schmett., 9, 201, pl. 260, figs. 1–2 (*Papilio*).
Euclea Bergstr., Nomencl. Ins. Han., 4, 23, pl. 79, figs. 1–2 (*Papilio*).

Cocyta Cram., Pap. Exot., 2, pl. 101, figs. A B (*Papilio*).
Selenis Kirb., Faun. Bor. Am., 4, 289 (*Melitaea*).
Marcia Edw., Trans. Am. Ent. Soc., 2, 207 (*Melitaea*).
Liriope Butl. (nec Cram.), Cat. Fabr. Lep., 103.
PACKARDII Saund. in Pack., Guide Ins., 256 (*Melitaea*)—suff. aberr.

Canada and Northern half of U. S. east of Rocky Mountains; Colorado; Montana.

175. Batesii *Reak.*, Proc. Ent. Soc. Phil., 5, 226 (*Eresia*); Kirb., Syn. Cat., 172.

Virginia to New York.

176. Gorgone *Hübn.*, Samml. Exot. Schmett., 1, figs. 3–4 (nec. 1–2) (*Dryas reticulata*).
Cocyta Hübn. (nec. Cram.), Index, 3 (*Phyciodes*).

Georgia; Florida.

177. Phaon Edw., Proc. Ent. Soc. Phil., 2, 505 (*Melitaea*); Ib., Syn. N. Am. Butt., 17.

Georgia and Gulf States.

178. *Hermas *Hewits.*, Exot. Butt., 3, pl. Eresia, 5, fig. 32 (*Eresia*); Kirb., Syn. Cat., 174.
Genigueh Reak., Proc. Ent. Soc. Phil., 5, 225 (*Eresia*).

Southern California (Mexico).

54. ANTHANASSA *Scudder.*

Type: Eresia cincta *Edw.*

In this group I would class those Hamadryades which have been placed by authors under Melitaea and Eresia, which are allied to Chlosyne in antennal structure, have the outer margin of the fore wings produced at the lowest subcostal and lowest median nervules and excised between them, and which have the hind wings fuller than usual in the subcostal area, producing a straighter and broader outer margin. They seem to agree in having a narrow and nearly straight mesial band of spots on the hind wings, and on the fore wings a greatly interrupted, nearly straight, transverse series of spots in the outer half of the wing and a similar mesial series, but strongly curved, and below directed toward the middle of the inner border.

179. texana *Edw.*, Proc. Ent. Soc. Phil., 2, 81 (*Melitaea*); Kirb., Syn. Cat., 174.
cincta Edw., Proc. Ent. Soc. Phil., 2, 502 (*Eresia*).
Smerdis Hewits., Exot. Butt., 3, pl. Eresia 5, figs. 33, 34 (*Eresia*).

Florida; Texas (Mexico).

180. *punctata *Edw.*, Trans. Am. Ent. Soc., 3, 191 (*Eresia*).

S. Arizona; New Mexico.

I am acquainted with two other undetermined species of this genus, from the Southern United States.

55. CHLOSYNE *Butler* (1870).

Type : Papilio Janais *Drury*.

***Janais** *Drury*, Ill. Nat. Hist., 3, pl. 17, figs. 5–6 (*Papilio*); God., Encycl. Méth., 392 (*Nymphalis*); Doubl.-Westw., Gen. Diurn. Lep., 186 (*Synchloe*); Kirb. Syn. Cat., 178 (*Coatlantona*).
exas (Mexico).

Mediatrix *Feld.*, Reise Novara, 395 (*Synchloe*); Kirb., Syn. Cat., 178 (*Coatlantona*).
Saundersii Edw. (nec Doubl.), Syn. N. Am. Butt., 18 (*Synchloe*).
exas (New Grenada).

Adjutrix *Scudd.*
Lacinia Edw. (nec Hübn.), Syn. N. Am. Butt., 18 (*Synchloe*).
exas.

his species differs from *Lacinia* of Hübner (under which name I have
ived it from Mr. Edwards) in that the mesial band of dull, pale fulvous
s, deepening outwardly into orange fulvous, extends also across the fore
gs, forming there an arcuate band broadest on the lower half of the wing,
especially, as a general rule, in the lower median interspace. Beneath, the
amesial spots of the hind wings are wholly white. It is much more
ely allied to *Mediatrix* Feld., from which it differs principally in that the
ial band of the hind wings is broadest in the middle, and, excepting the
l extension common to both species, narrows decidedly toward either
der.

***Erodyle** *Boisd.* MS. in Doubl. Gen. Diurn. Lep., 186 (*Synchloe*); Bates, Ent. Month. Mag., 1, 84 (*Synchloe*); Kirb., Syn. Cat., 178 (*Coatlantona*).
exas.

Crocale *Edw.*, Trans. Am. Ent. Soc., 5, 17 (*Synchloe*).
rizona.

IV. Subfamily HYPATI *Hübn.* (1816).

[Lybithides *Boisd.*, 1836.]

56. HYPATUS *Hübner* (1825).

Type : Papilio Carinenta *Cram.*

***Carinenta** *Cram.*, Pap. Exot., 2, pl. 108, figs. E F (*Papilio*); God. Encycl. Méth., 9, 170 (*Libythea*); Hübn., Cat. Franck, 85.
ew Mexico and Arizona (to Surinam).

7. **Bachmanii** *Kirkl.*, Sill. Amer. Journ. Sc., [2] 13, 336, fig. (*Libythea*); Edw., Butt. N. Am., 2, pl. Libythea 1, figs. 1–4, a–h (*Libythea*).
ood plant : *Celtis occidentalis.*
nited States east of the Mississippi.
he insect figured by Boisduval and Le Conte is a Cuban species, and has
er, so far as I am aware, been found in the United States.

XX. Observations on North American Moths

[SECOND PAPER.]

BY LEON F. HARVEY, A. M., M. D.

[*Read before this Society February* 5, 1875.]

NOCTUAE.

Apatela Radcliffei, n. s.

♂.—Antennae simple; the first and third palpal joints white, the middle brown; thorax in front marked with black at the sides. Head above, thorax and collar, like primaries in color, unmarked. Primaries of a frosted silver gray, the basal black streak extended outwardly to the t. a. line, bordered above with white. T. a. line geminate, divaricate, inner line the darkest, distinct, outer line faint, inner line better marked at the center of the wing, with a costal tooth. Basal half line evident. T. p. line, commencing at the costa nearly above the reniform spot, curves outwardly to a point beneath and beyond the reniform. The outer component line is black, the inner faint; the line itself is obsoletely angulated superiorly. The characteristic mark of this genus is well indicated above internal angle, crossing the t. p. line and accompanied beyond the line with a slight black shading. The subterminal line is a faint, broad, irregular streak. The reniform spot only half margined, and that the inner one with black; the orbicular spot oval, with a black margin and an almost white annulus within that; the costa faintly dotted; fringes concolorous.

Beneath the primaries are fuscous, the inner margin of the wing nearly white, the t. p. line very distinct, outwardly angulate over the median nervules. The secondaries above fuscous, approaching to black, fringes white; beneath, of a mottled white; a black dash near the base; the discal spot black, prominent, the outer line strongly marked, obscurely denticulate, fringes concolorous.

Expanse, 39 m. m. *Habitat,* Massachusetts.

This species is allied to *A. hasta,* differing from it in the more evenly marked t. p. line, the larger orbicular spot, the want of a discal spot between the stigmata, and from all allied species in the absence of the streak opposite the cell. The peculiar frosted gray color is shared by no other species.

To this species I give the name of *Radcliffei*, for in so doing, I connect a beautiful insect with the name of one who is too well known for me to attempt to give prominence to himself or his work, and show the appreciation and esteem I have for a good friend and an able teacher, Mr. Augustus Radcliffe Grote.

Apatela persuasa, n. s.

♂.—A species between *A. superans* and *A. afflicta*. Smaller than *superans*, without the testaceous patch on internal margin at base and not so much shaded with black. Clear gray and black, the orbicular more rounded than in *superans*. The lines are similar in the two species. Hind wings more as in *afflicta*, whitish, with the veins marked, clouded with fuscous outwardly, with a median shade. Beneath whitish, with a common line dentate on hind wings which bear a discal lunule and a mark above it on costa. Front with a black line. Thorax mixed gray.

Expanse, 40 m. m. *Habitat*, Texas (Belfrage, August).

Agrotis rudens, n. s.

♂ ♀.—This species resembles *annexa* but is smaller and has a casual resemblance to *Laphygma frugiperda*. The orbicular is distinct, not absent as in Mr. Morrison's *simplicius*. The color is pale testaceous gray, the wing somewhat mottled with fuscous. A black basal streak extends from the base beyond the t. a. line where it replaces the claviform. Orbicular and reniform, small, subequal, concolorous, reniform with an interior shaded blackish annulus. A black streak above the vein connects the spots and obtains between the orbicular and the faintly geminate t. a. line. Below the basal dash, on the subbasal space, the wing is shaded with blackish. T. p. line reduced to fuscous points, sometimes hardly visible. Subterminal line pale, sinuate. Subterminal space darker, with a pale apical shade before which there is a costal darker shading. Hind wings pellucid white, slightly fuscous in the female, without discal mark. Head and base of collar yellowish gray; thorax fuscous, collar with a black line; palpi black at the sides. All the tibiae spinose. Male antennae ciliate beneath.

Expanse, 33 m. m. *Habitat*, Texas (Belfrage, December).

Agrotis sculptilis, n. s.

♂.—This is a cleanly marked, handsome species, allied in color and size to *Bostoniensis*. The fore tibiae have the spinular series terminating in longer spines. The eyes are indistinctly lashed. It would thus share some of the character of Pleonectopoda *Grote*, and might be referred to that genus. I cannot consider, however, that genus as sufficiently distinct from *Agrotis*. The mesial tuft seems to me to be shared also by *Agrotis saucia.* The single species of Pleonectopoda had better be united with *Agrotis* and form the type of a section of that large genus. Mr. Morrison has referred the *fimbriaris* of Guenée to *Pleonectopoda*; I do not know the species, but, from the description of the antennae, etc., it would seem to belong to a different genus, for which Mr. Grote's proposed name in the List, Eucoptocnemis, should be retained.

Agrotis sculptilis has ashen fore wings, shaded with black beyond the median shade, so as to obscure the reniform spot and t. p. line. The markings are neat, deep-black, and very narrow. T. a. and basal half-line geminate. T. a. line slightly angulate, the most prominent inflection below the s. m. nervure. Orbicular large, spherical, concolorous. Claviform large, concolorus. Reniform well sized, indented outwardly. T. p. line geminate, lunulate. Hind wings soiled white; beneath with faint discal mark and dotted line. The collar with a black central line. Tegulae blackish cinereous. Antennae brushlike.

Expanse, 35 m. m. *Habitat*, Texas (Belfrage, November).

Agrotis chortalis, n. s.

♂ ♀.—A large species of a faded olive gray, with some resemblance to the species of *Glaea.* All the tibiae spinose. Basal half-line and t. a. line marked in deep velvety black. The t. a. line is dentate at costa, and opposite the cell across the median vein forms an inwardly concave, c-shaped curve, which sometimes stands out as a disconnected portion of the line; below this the line fades out and the black color ceases. Ordinary spots large, vague, concolorous. Median shade distinct with an inward angle on the cell; from the median nervure below the reniform it runs straightly inwardly obliquely to internal margin. T. a. line geminate, the inner line more black and slightly lunulate, the outer even, faded; the line is somewhat s-shaped. Subterminal line faint. Hind wings fuscous in the female, whitish in the male. Head and thorax concolorous with primaries. Palpi black at the sides. Wings beneath with ruddy tinting on the costal and terminal borders, finely irrorate; secondaries with a small dot and outer fuscous continued line very near the margin, fading out in the male. Body hairs beneath somewhat ruddy.

Expanse, 40 m. m. *Habitat*, Texas (Mr. Belfrage, November).

Besides the foregoing three species Mr. Belfrage has collected in Texas *Agrotis badinodis* Grote, *Agrotis simplicius* Morr., *A. alternata* Grote, *A.* [illegible] G. & R., *A. lubricans* (Guen.), *A. venerabilis* Walk. (= *rufipectus*?), *A. tricosa* Lintner, *A. auxiliaris* Grote, *A. annexa* Treitschke, *A. saucia* Hübner, and *A. suffusa* (W. V.).

Dianthoecia palilis, n. s.

♂ ♀.—This is a pale yellow-gray species with something of the tone of *insolens*. The male has the hind wings pure white, immaculate, the female fuscous. The ordinary lines are approximate ; the inner line of the t. p. line fine, black, regularly waved, in the female the line is not defined. The median space is narrowed inferiorly. Both sexes show the median shade as a distinct black ill-defined shade spreading to a blotch on the cell between the obsoletely ringed stigmata ; there is a more yellowish shade on the median space inferiorly. Subterminal line obsolete or indicated by a fuscous blotching. The female primary is darker than the male. Head, thorax and abdomen above concolorous with the ground color of the wings. Palpi black at the sides. Feet dotted black and pale, else the vestiture is pale on the legs and body. Eyes hairy ; oviduct feebly exserted.

Expanse, 28 m. m. *Hab.,* Texas (Belfrage).

Mamestra marinitincta, n. s.

♂.—This small species has the thorax and fore wings entirely of a delicate greenish gray. The sides of the tegulae are black. The narrow palpi are black laterally. The median lines are black, very approximate inferiorly and the small black outlined claviform nearly spans the median space. The median space is more brown or blackish than the rest of the wing. The t. p. line is regularly scolloped ; the t. a. line is convex, nearly even, well marked. The orbicular is rounded, small, black-ringed, concolorous. The reniform is empty, very little constricted, of the pale greenish color of the wing which obtains over the costal region of the median space. Subterminal line obsolete. Hind wings blackish fuscous, paler at base, with whitish interlined fringes and traces of an outer line more apparent beneath where they are whitish, irrorate on costal region and show a distinct discal dot. Fore wings beneath blackish, except along internal margin where they are whitish. Tibiae and tarsi black and gray marked ; eyes hairy.

Expanse, 25 m. m. *Hab.,* Texas (Belfrage, November).

Homohadena atricollaris, n. s.

A small species very similar to *badistriga*, differing by the shaded black streak from the base outwardly to the exterior margin being apparently single, there being no distinct submedial basal and cellular streaks as in *badistriga*. The course of the median line is the same. The black shade includes a white cellular spot near the t. p. line. This latter is a little more uneven than in its ally. The collar is not pale but marked with deep black at the base, narrowly lined above with white, and the disc of the thorax is also, with the top of the collar, ashen black. The upper edge of the collar is narrowly edged with white. The hind wings above are wholly pale, unlined; beneath with a faint line.

Expanse, 27 m. m. *Hab.*, Texas (Belfrage).

Homohadena induta, n. s.

Palpi, the third article very short, with brown markings; antennae, simple. Thorax and primaries of a blackish brown, irrorate with black; beneath the thorax and abdomen are a light gray; above the abdomen is a blackish gray; the legs are gray with black markings. The linear black basal streak is continued across the t. a. line; the t. a. line is curved a little outwardly on the costa, then straight to the internal margin. The t. p. line is nearly straight to the center, then passes inwardly and downwardly to the position of a median shade, from that straight to the inner margin. The subterminal line consists of a slight irregular shading, the terminal line distinct, continuous, fringes concolorous. Beneath, cinereous, slight markings on the costa, terminal line present. The secondaries above are centrally pellucid white, bordered outwardly irregularly with fuscous, the veins soiled. Beneath, the discal spot and an outer evident line, the costal and posterior borders peppered; fringes white.

Expanse, 33 m. m. *Hab.*, Texas.

Distinguished by the narrowness of the lines and the want of a suffusion. The tone is like that *Lepipolys perscripta*, and the generic position of the species is not assured.

Prodenia flavimedia, n. s.

♂ ♀.—This species is much smaller than *commelinae*, and is probably the *commelinae* of the Missouri Reports. It is found from New York to Texas. The median space below the nervure and obliquely upwards to costa over the orbicular is dull ocher yellow, and the thoracic squamation is mixed with the same color. The apices and subterminal space except between the third and fourth nervules are washed with whitish. The subterminal line is white, very near the margin, slightly indented opposite the cell. The brown fringes are cut finely with white at the extremity of the veins. The reniform is incurved, marked with yellowish superiorly, narrow. Hind wings pellucid, iridescent, without discal marks above or below, with narrow smoky edging and soiled veins.

Expanse, 34 m. m.

This cannot be Guenée's *ornithogalli*, which is described as wanting all yellow shadings and has an obtuse reniform like *Laphygma frugiperda*.

Prodenia lineatella, n. s.

This species resembles the preceding in size, but differs by wanting all yellow shades. The white apical spot limited by the white subterminal line which is shaped as in *flavimedia,* but visible throughout its course. There is a white shade on the subterminal space opposite the cell, else the subterminal space is dark like the rest of the wing. The median nervure and the third and fourth nervules on the median space are marked with pale and the orbicular lies in a pale oblique shade. Reniform as in *flavimedia,* but not distinctly pale superiorly. Claviform distinctly outlined with black; in *flavimedia* it is obscured by the yellow shading of the median field. Fringes cut with white. Hind wings pellucid, iridescent, without discal dots and with narrow smoky borders. Thorax dark wood brown like the ground color of fore wings. Abdomen tufted at base.

Expanse, 35 m. m. *Hab.,* Texas (Belfrage).

An allied Californian species in the Collection differs by the clouded secondaries with discal dot beneath.

Ablepharon absidum, n. s.

Palpi porrect, third joint short, antennae simple, eyes naked. Thorax above of a light lemon yellow, beneath still lighter, abdomen almost white. The primaries concolorous with the thorax, slight dark shadings on the nervules, the discal spot evident, fringes pale. Beneath there is the slightest shade of lemon yellow, the center having a dusky shade. The secondaries are whitish, above they are tinged with yellow and have the nervules brought into prominence by dark shadings. Beneath there is the merest approach to yellow shading ; the fringes are broad and glistening white.

Expanse, 35 m. m. Mr. Hy. Edwards, No. 2724, Oregon.

This species differs from *A. Henrici* by the absence of the strongly marked longitudinal lines, and in the lemon yellow cast.

Graphiphora arthrolita, n. s.

♂ ♀.—Eyes hairy; male antennae with the joints long and somewhat bead like, bristled beneath. The tibiae unarmed, the thorax subquadrate, untufted, abdomen untufted, the wings wide, the primaries pointed at apices, external margin rounded, produced opposite median nervules, sloping inwardly to the internal angle below vein 2. The thorax and primaries are a light brownish drab with a yellowish shade; the t. a. line is black but faint; the median shade more marked, most distinct just inside the reniform spot on the cell, making two angles, outwardly and inwardly; the t. p. line geminate, above rounded outwardly, below inwardly, the outer component line very distinct and waved; the subterminal and terminal lines a series of black dots; the reniform spot concolorous with a pale annulus; the orbicular spot hardly perceptible. Beneath dusky, an arcuated line on both wings; a discal spot on the secondaries.

Expanse, 38 m. m. *Hab.,* California (Mr. Behrens, November).

Distinguishable by the distinct black spots of the subterminal line.

Orthosia crispa, n. s.

♂ ♀.—The thorax and primaries of a bright tawny brown, a slight trace of the basal half line, the t. a. line geminate, irregular, the median shade line quite distinct at the inferior border, the t. p. line geminate, its outer line waved. The subterminal is broken into a series of black points; it is inaugurated on costa by very distinct, double, shaded, black marks; the terminal line is broken up into black points. The reniform and orbicular spots concolorous with the wing, only faintly marked, each having a darker annulus, the reniform constricted, with a black spot filling its lower portion; the median shade visible below the spot. The fringes are of a dark brown. Beneath of a light brown shade, glistening, the discal spot, the t. p. and the subterminal lines present.

The secondaries above have a cinereous shade with a wide light brown border all around. Beneath concolorous with the under surface of the primaries, the discal spot and t. p. line but slightly defined.

Expanse, 33 m. m. Mr. Behrens, Sanzalito, Cal., Oct. 22.

This species is allied to O. purpurea *Grote.*

Glaea tremula, n. s.

♂ ♀.—Varies slightly in the tone of primaries which are pale olive brown with faded brown lines. Abdomen flattened. Allied to *inulta.* The reniform is narrower superiorly and encloses a black dot. The t. p. line is slightly lunulate; the t. a. line outwardly bent, slightly sinuous; the orbicular, rather small, separate, rounded. Hind wings blackish fuscous with bright fringes. Internal margin of the fore wings reddish stained as are the fringes. Body parts concolorous. Median shade hardly apparent.

Expanse, 42 m. m. *Hab.,* Texas (Belfrage, November).

This species is very inconspicuously marked, the lines of a more brown tone than the wing and all the markings of the genus are present. From *inulta* it differs by the lunulate t. p. line, and the concolorousness of the lines and stigmatal rings, as well as by the erect, not oblique position of the ordinary spots.

Xylomiges crucialis, n. s.

♂ ♀.—Palpi, short, eyes hairy, antennae strongly pectinate, the thorax and primaries whitish gray, a well marked black collar, the thoracic vestiture at the base of the wing margined with black, a black basal streak. The transverse lines are broken, black, running diagonally across the wing. From the apex an interrupted black shade extends across the t. p. line to the t. a. line giving the appearance of a cross. The reniform and orbicular spots are obsolete, the former with a central carneous shade, well defined black points at the termination of the nervules. Beneath of a paler gray, an angular brown mark at the costa, carneous shadings surrounding it, brown points at the termination of the nervules, near the base the costa is distinctly marked with brown. The secondaries are white with the discal spot and terminal lines present, broken. Beneath there is a brown shading on the costa and the spot and lines as above, fringes white. The species resembles *curialis* in the white secondaries and *hiemalis* in the marking and color of the primaries.

Expanse, 30 m. m. Hy. Edwards, 5575, California.

Annaphila mera, n. s.

Palpi with the third article black. Primaries brownish black; the t. a. line geminate, convex and shaded light inwardly. The t. p. line rounded outwardly opposite the stigmata; a dark, nearly black median shade line, near the lower portion a line unites the t. a. and t. p. lines, the subterminal line faintly marked. The reniform has a light annulus, the orbicular spot light in color, oblique, fringes concolorous, Beneath the wing is of a bright yellow, with a dark broad margin, nearly black; at the center are two subquadrate spots of a deep black, the t. p. line is observed at the costa outside of the spots, the costa is darkly shaded near the base of the wing. At the inferior border the yellow fades nearly out and the line of demarcation is nearly black.

Secondaries of a darker yellow, black discal spots, broad uneven brown border, below of a grayish yellow, the discal spot faint, the border dark and even.

Expanse, 23 m. m. *Hab.*, California.

Distinguishable from *decia* and *depicta* by the absence of the basal black fascia on secondaries. Allied to *danistica* by the markings of the under surface of fore wings but the color is paler, the black spots not ocellate and the outer line fragmentary.

Grotella, n. g.

The moth is closely scaled, the body parts being all appressedly squamous. Ocelli. Fore tibiae with an inner terminal claw like spine and a short outer spinule. Middle tibiae spinose; hind tibiae unarmed; all the tarsi unarmed. Palpi not exceeding the embossed front. Eyes naked. Male antennae stout and rather short, entirely simple, being merely pubescent beneath, scaled above. Fore wings triangulate, apices rounded, entire; hind wings rounded.

This genus, named for Mr. A. R. Grote, is erected for a small species, recalling the Arctiid genus *Emydia*, with snow white primaries. The genus falls in between *Heliothis* and *Tarache*. The neuration cannot as yet be studied.

Grotella septempunctata, n. s.

♂.—Fore wings and thorax immaculate snow white. At the place of the t. a. line are three perpendicular black distinct rounded dots, one at the middle of the wing, one at costa, one at internal margin. This is succeded at outer third by a second, nearly parallel row of four black dots in pairs, the interspace between the second and third dots over the median nervules being widest. Beneath the fore wings are blackish, except at internal margin, with a black stained dot at outer third. Hind wings white beneath, with the costal edge smoky and an indication of a transverse facia there apparent; above smoky outwardly, white at base. Antennae testaceous. Head above white, face black; terminal palpal joints black. Tongue testaceous. Legs mostly black or blackish, white or dotted. Lines of the thorax beneath white.

Expanse, 21 m. m. *Hab.*, Texas (G. W. Belfrage, November).

Lygranthoecia roseitincta, n. s.

Antennnae, simple, hairy, labial palpi, hairy, eyes naked, ocelli, fore tibae with a double row of spinules and inner longer terminal claw; middle and hind tibae unarmed. Thorax of a light ochreous yellow, beneath drab; abdomen dark Quaker drab at upper portion, lower portion reddish, beneath, light carmine red, anal tuft yellow; tibae red. Primaries light brown drab, approaching a dusky yellow, t. a. line, single, convex outwardly, most angulate at cell, almost obliterated on inferior margin, space between the t. a. line and the thorax filled with carmine; t. p. line, concave above, convex below, even on the costa; carmine shading in the subterminal space, an ill-defined median shade; terminal line black, fringes whitish. Reniform, oval, inwardly oblique, orbicular absent. Beneath, carmine red, apex and costa white, basal streak black; orbicular spot a black dot, a white line uniting it with the subquadrate reniform spot, subterminal and terminal spaces blackish, hardly obscuring the carmine, inferior marginal region white. The secondaries are of a bright crimson color, a broad black margin not extended quite to anal angle, fringes white except at anal angle, where they are concolorous. Beneath, concolorous, the black band only obtaining at internal angle, a shade darker on the disc, fringes concolorous.

Expanse, 18 m. m. *Hab.,* Texas (Belfrage).

This species is allied to *Spraguei* and *Packardi,* differing by the crimson hind wings and the absence of the discal spot.

Acopa, n. g.

The eyes are naked; the tibiae all unarmed. The body is linear and narrow, the vestiture rather rough, flattened scales and hair; there is a dense bunched tuft of scales on the thorax behind. The male antennae are brush-like. The wings are elongate, costal edge depressed, widening outwardly. The habitus and markings recall *Lygranthoecia marginata,* and the genus is allied to the Heliothidae rather than to *Hadena.*

Acopa carina, n. s.

♂ ♀.—Olivaceous blackish, the female is paler. The basal half-line is dentate, the extra basal space along the lines washed with white. Median lines dark, the t. a. flexuous, the t. p. minutely rivulous, edged with white outwardly; the lines approximate inferiorly. Reniform obsoletely indicated, upright, broader at base, black shaded, with a black annulus; orbicular wanting. Subterminal line absent. A white inner terminal shading to the black marginal line. Hind wings wholly blackish. Beneath both wings blackish, immaculate. Abdomen feebly annulate with pale.

Expanse, 23 m. m. *Hab.,* Texas (Belfrage).

Lita, n. g.

Form of *Syneda*, differing by the lashed and naked eyes being constricted and the male antennae being furnished with a thick cilial fringing. The head is more sunken and the vestiture more hairy than in *Syneda*.

Lita sexsignata, n. s.

Primaries blackish, with *Syneda*-like markings. Two whitish incomplete fasciae, the first on the median space anteriorly, inconspicuous, and sometimes obsolete, the second beyond the reniform. Beneath the fasciae are more distinct, the outer continued to internal margin. Hind wings black, with three spots on either surface, above light sulphur yellow, beneath white ; the upper spot on the disc the larger, the lower two are situate opposite each other near external margin before the angle, fringes black, touched with white. Body hairs blackish, beneath mixed with pale ; anal hairs yellowish white.

Expanse, 27–32 m. m.

Mr. Henry Edwards, No. 5536, Nevada; Mr. Crotch, in Mus. Comp. Zoology.

Bolina Jucunda, *Hübner.*

Specimens sent by Mr. Belfrage from Texas are better marked than material from Alabama in the Collection which corresponds with Guenée's description of *cinis.* I think the species admits of both forms, while the Texan specimens better agree with Hübner's figure.

Bolina agrotipennis, n. s.

Stouter than *jucunda ;* the fore wings are of the obscure yellow fuscous tint that characterizes some specimens of *Agrotis saucia*, and have inconspicuous markings. The median space is palest ; the subterminal line is indicated on costa, where it is pale, geminate and preceded by two cuneiform black marks. The median lines are badly defined ; a black stain marks the reniform. The terminal festooned line is obvious, and is repeated on the fringes which are fuscous, touched with white at internal angle. Hind wings largely black, white at base; the marginal antennal white fleck inconspicuous, fringes white, touched with fuscous.

Expanse, 45 m. m. Texas (Belfrage).

Eubolina, n. s.

Differs from Bolina by the lengthily ciliate male antennae. The frontal squamae are gathered into a pointed tuft. The palpi are shorter, not curved upwards, but extended straightly forwards, the second joint not exceeding the front, the third elongate and comparatively stout. The hind wings are rounded, not white in the disc, but wholly brown, shaded transversely, distantly recalling the genera allied to *Homoptera*.

Eubolina impartialis, n. s.

The terminal palpal joints are a little longer than usual, subspatulate. Rather stout bodied. Median lines brown, of the usual shape, but lunulate, not even. Median space whitish, shaded lightly with blackish on costa. The narrow median shade line is irregular and continued, thread-like, dentate. A minute point for the orbicular. Reniform upright, narrow, black-ringed. The subterminal line is preceded by a blackish shading. Terminal space shaded with pale brown inferiorly. Terminal festooned line evident. Hind wings wholly brownish fuscous with faint indications of outer parallel rivulous shade lines. Beneath the hind wings are whitish, with minute dot and outer narrow lunulate fuscous line ; a subterminal line indicated before the margin. Fore wings with the costa whitish, else pale testaceous, with discal mark ; traces of a median arcuate line on costa, and a subterminal shade line faintly continuous. Body white beneath.

Expanse, 32 m. m. July 24th, Texas (Belfrage).

Stictoptera divaricata, *Grote.*

A fresh Texan specimen is more purely blackish, the thoracic crests and lateral abdominal hairs remaining ferruginous, than Mr. Grote's type from Wisconsin. The fore wings are white flecked on the disc and on internal margin about the t. p. line. The apical white lunule inaugurating the subterminal line is distinct. The under side is as in the type. Dec. 3d (Belfrage).

Catocala Belfragiana, n. s.

Palpi brown, third article short, antennae simple. The thorax hoary gray. The abdomen pale brownish yellow, beneath the thorax and abdomen grayish. The primaries concolorous with the thorax. On the costa are indications of the lines, else obliterate. The outer half of the wing is a few shades darker than the inner half, having somewhat of a silky lustre. Fringes concolorous. Beneath the wing is of a pale lemon yellow ; a median black band is constricted at the inner margin. The terminal band is black, broad, anteriorly concave, nearly approaching the median band on the costa.

The secondaries are of a deep yellow ; the terminal band is blackish, broad, constricted before the angle, and forming a nearly disconnected spot. The anal angle is free from black scales. Fringes white; no median band. Beneath the wings are of a lighter yellow, hoary on the costa, a faint median band terminating at the disc; the terminal band ill defined.

Expanse, 46 m. m. Mr. Belfrage, No. 9; June 16th, Texas.

Differs from Guenée's description of *messalina* by the concolorous collar and by the obsolescence of all markings on the primaries, as well apparently by its larger size, while the cut of the wings sensibly differs from *androphila* and allies.

Named for Mr. G. W. Belfrage, whose scientific collections in Texas are widely appreciated, and have greatly increased our knowledge of our fauna.

Remigia hexastylus, n. s.

♂.—This is a large species which has the hind feet provided with flattened hair "en nageoire." It cannot be the *marcida* of Guenée, because this author says: "Toutes les lignes peu marquées," etc. The fore wings are somewhat pale lilac gray with the costal edge dusky, powdered finely and sparsely with black dots. Usually there is a fine black dot before the t. a. line which readily escapes attention. The basal half-line can be perceived. The median lines are distinct, continued, ochre brown; the t. a. line with an anterior pale shade, a little concave. The t. p. line straight, shortly rounded on costal region. Median space free from the lines which distinguish *latipes.* Reniform large, concolorous, a fine and wide blackish annulus from the inner and lower angle of which the undulated median shade descends to internal margin; sometimes the shade line is double. There is no "taché en palette." A subterminal series of nervular points; fringes dark. Secondaries a little paler, somewhat yellowish at base, with darker terminal shading and an exterior shade, recalling those of *Drasteria.*

Expanse, 47 m. m. *Hab.,* Canada to Texas.

The species determined in the Collection as *latipes* is more variable in color and slighter in form. It has the median space covered by fine lines, and on internal margin in some specimens a blackish discoloration.

Remigia indentata, n. s

♂.—This species resembles *latipes* in all characters except that the subterminal line is not straight in its general course, but is slightly sinuous; and that the "taché en palette," below the reniform, fuses with the t. p. line, so that the line appears broken to make an inward sinus below the reniform. The color is wood-brown with a slight carneous gray shading on the primaries, and is perhaps variable as in *latipes*.

Expanse, 41 m. m. *Hab.*, Texas (Belfrage).

Pseudaglossa denticulalis, n. s.

Of the same size with *lubricalis*, but with gray, powdery wings which recall those of the species of *Epizeuxis*. The long palpi and antennae as in the allied species. The transverse lines on the primaries occupy relatively the same positions as in *lubricalis*; the t. p. line and anterior line black, the former denticulate, notched; subterminal line pale, following a similar course as in the allied species. Reniform pale, with a central lunate black streak. Median shade blackish, becoming diffuse inferiorly and forming a blackish blotch before the t. p. line. Hind wings like primaries, crossed by two darker shade lines followed by pale shades. Beneath the primaries are more or less wholly shaded with blackish, except along the costal edge, crossed by dentate lines; the secondaries are grayish, like upper surface, with a black lunule and double dentate lines. Above there is a black fine terminal line resolved into points. Abdomen annulated with pale, like the wings in color; head and thorax darker; tarsi and tibiae dark marked. Fringes pale, narrowly cut with blackish opposite the points of the terminal line.

Three specimens were collected by Mr. Stultz at Easton, Pennsylvania.

Bomolocha perangulalis, n. s.

This pale species is a little larger than *achatinalis* and wants the usual brighter tint of the dark median space. Its nearest ally seems to be *deceptricalis*. The median lines are continuous, evident, even, pale; the t. p. line with an outer angulation opposite the cell. A black discal point. The paler terminal field is dusted with white and divided by the undulated, subterminal line which consists of an uninterrupted series of black dots followed by a pale scalloped edging; terminal space with a dark brown shade which leaves the apices pale. Hind wings pale, dusky centrally and at base, with a discal point. Beneath both wings very pale, somewhat ochreous, subirrorate with black discal points.

Expanse 35 m. m. *Habitat,* New York.

In appearance this species has a certain resemblance to *Parallelia bistriaria*. I cannot reconcile with this species any of Mr. Walker's descriptions of Hypenae in the British Museum Lists.

Pseudorgyia, n. g.

A Deltoid genus allied to *Bomolocha*, remarkable for its plumose ♂ antennae, the branches setose. The stout and long labial palpi are projected straightly forwards, the second joint is thick and they are not curved upwards and are shorter than in *Hypena*. The wings are wide not narrow as in *Sisyrhypena*. The whole insect in size, form and appearance recalls the Bombycid *Orgyia leucostigma*.

Pseudorgyia versuta, n. s.

♂.—The thorax, head and palpi above have a grayish cast and this shade spreads over the primaries at base. Wings concolorus, blackish fuscous; no markings except the median lines on primaries, the t. p. line flexuous, occupying the relative position that it does in *Bomolocha*, the t. a. line faint, arcuate. Two black points, pupilled with pale, on the cell take the place of the stigmata. Hind wings nearly black, as are both the immaculate wings beneath. Antennae subtestaceous; palpi darker at the sides. Fringes concolorous with the wings.

Expanse, 28 m. m. *Hab.,* Texas (Belfrage).

GEOMETRAE.

Crochiphora coloraria, var. sphaeromacharia.

♂.—Antennae pectinate, palpi erect, thorax olivaceous above and dusky yellow below, abdomen dusky yellow and tinted with olivaceous above. Costa dotted with faint minute black spots. Primaries olivaceous; t. a line purple, exserted outwardly superiorly on the cell, median shade line very indistinct, t. p. line purple, passing downwards and inwards, on its outer border shaded into red, outside of it two large round black spots, one at the center, between veins 3 and 4, and the other at posterior border of wing, small dash at apex, fringes concolorous, the whole surface covered with minute black points. Below, yellow sprinkled with dark brown, a dash at discal cell, markings of the t. p. line and the two spots of the upper surface, clearly defined. Secondaries, light straw color, t. p. line continuous from primaries, small dash near anal angle, below the t. p. line olivaceous, whole surface mottled. Below, concolorous with under surface of primaries, presenting same mottled appearance, discal spots black, three transverse brown lines equidistant in middle third, at superior angle three black spots almost forming a line.

Expanse, 36 m. m. *Hab.,* Alabama (Mr. Grote).

It differs from *coloraria* in the heavier ornamentation of the t. p. line, and the two round spots posterior to it.

Dr. Packard does not consider the remarkable specimen as being specifically distinct from *coloraria.*

XXII. Synopsis of the Discomycetous Fungi of the United States

BY M. C. COOKE, M. A.

THE time appears to me to have arrived for making an attempt at obtaining some estimate of the Fungi which have already been detected in the United States, for the purpose of preparing, in some form or other, a guide to the Mycologic Flora. As a preliminary step I have been induced to publish, as speedily as I can prepare them, consecutive lists of groups and sections, such as the present, which, however imperfect it may be, is the best which the materials at my disposal enable me to accomplish. In order to render these lists of real utility in attaining their object, the co-operation of Mycologists in all the States must be earnestly solicited. What I would desire of them is correction and addition, especially of localities, and, since many of the species of Schweinitz still require confirmation, they may be able to furnish this confirmation. All specimens would be acceptable, as helping to a knowledge of the Fungi of the States, and their distribution; credit being invariably given, either in revised lists, or in the Flora when published, to all who have rendered such aid, their names being inserted, as in the present instance, not only as a guarantee of accuracy, but as a well merited recognition of services rendered. Revisions and additions, as well as specimens, named or unnamed, but localized, are requested to be sent to the address here named.

No. 2 GROSVENOR VILLAS, JUNCTION ROAD,
LONDON, N., ENGLAND.

SYNOPSIS DISCOMYCETUM.

Order I. **HELVELLACEI** *Fr.*

Gen. 1. **MORCHELLA** *Dill.*

1. **Morchella esculenta** *Fr.* On the ground. Ohio (Lea); N. Y. (Peck); N. Eng. (Sprague).
   var. CONICA *P.* Rhode Isl. (Berk.); Ohio (Lea); Penns. (Coultas).
2. **Morchella elata** *Fr.* On the ground. N. Eng. (Sprague).
3. **Morchella foraminulosa** *Schwz.* On the ground. Car. (Sch.).

Gen. 2. **GYROMITRA** *Fr.*

1. **Gyromitra esculenta** *Fr.* On the ground. Car. (Rav.); N. Eng. (Sprague); Maine (E. C. Bolles); Ohio (Lea); N. Y. (Schw.).
2. **Gyromitra Caroliniana** (*Schwz.*). Earth in woods. Car. (Schw.); Mass. (Brit. Mus.).

Gen. 3. **HELVELLA** *Fr.*

1. **Helvella crispa** *Fr.* In pine woods. Car. (Curtis); N. Eng. (Sprague); N. Y. (C. E. Peck).
2. **Helvella lacunosa** *Afz.* On the ground. Car. (Curtis); Alabama (Curt.).
3. **Helvella sulcata** *Afz.* In shady woods. Car. (Curtis); N. Y. (Peck).
   var. PALLESCENS *Schæff.* N. Y. (W. R. Gerard).
4. **Helvella infula** *Fr.* On the ground. Car. (Schw.); N. Y. (Peck).
5. **Helvella monachella** *Fr.* On the earth. N. Eng. (Sprague).
6. **Helvella costata** *Schwz.* In sandy ground. Car. (Schw.; Curt.).
7. **Helvalla atra** *König.* On soil. Car. (Ravenel).
8. **Helvella elastica** *Bull.* On the ground. N. Y. (Peck).
9. **Helvella ephippium** *Lev.* About trunks. Car. (Curt.); N. Eng. (Frost); Virg. (Curt.).

Gen. 4. **MITRULA** *Fr.*

1. **Mitrula paludosa** *Fr.* In swamps. Alabama (Beaumont); Car. (Curt.); N. Y. (Peck); N. Jersey (Ellis).
2. **Mitrula lutescens** *Berk.* In damp places. Yellow, somewhat viscid, stem solid, squamose, sporidia oblong, slightly curved, 5–nucleate (.035 m. m.). Car. (B. & C.).
3. **Mitrula inflata** *Schwz.* (Schwz.)
4. **Mitrula crispata** *Fr.* N. Eng. (Sprague).
5. **Mitrula exigua** *Fr.* On dejected stems. Car. (Schwz.).
6. **Mitrula elegans** *Berk.* Clubs small, obovate, stem very long. United States (Green).

Gen. 5. SPATHULARIA *Pers.*

1. **Spathularia flavida** *P.* In fir woods. Maine (Curt.).

Gen. 6. LEOTIA *P.*

1. **Leotia circinans** *Pers.* In woods. Car. (Schwz.).
2. **Leotia lubrica** *Pers.* In moist woods. Car. (Curt.); N. Y. (Peck).
3. **Leotia chlorocephala** *Schwz.* In damp sandy woods. Car. (Rav.); Penn. (Michener); N. Eng. (Frost).
4. **Leotia viscosa** *Fr.* In damp sandy woods. Car. (Rav. iv, 22).
5. **Leotia lutea** (*Vibrissea lutea* Peck). N. Y. (Peck).
6. **Leotia infundibuliformis** *Schwz.* (Species uncertain). N. Y. (Schwz.).

Gen. 7. CIDARIS *Fr.*

1. **Cidaris caroliniana** (*Verpa* Schwz.) *Fr.* Car. (Schwz.).

Gen. 8. GEOGLOSSUM *P.*

a. Sporidia hyaline.

1. **Geoglossum microsporum** *C. & P.* N. Y. (Peck).
2. **Geoglossum flavum** *Peck.* N. Y. (Peck).
3. **Geoglossum viride** *P.* Car. (Curt.).

b. Sporidia colored.

4. **Geoglossum hirsutum** *Pers.* In wet ground. Car. (Curt.); La. (Hale); N. Y. (Peck).
5. **Geoglossum glabrum** *Pers.* (*Geoglossum simile* Peck). Damp mossy ground. Car. (Schw.); N. Jersey (I. B. Ellis).
6. **Geoglossum Peckianum** *Cooke.* (*G. glutinosum* Peck). N. Y. (Peck); N. Eng. (Murray).
7. **Geoglossum difforme** *Pers.* In wet ground. Car. (Curt.); N. Eng. (Murray; Frost).

Sporidia uncertain.

8. **Geoglossum rufum** *Schwz.* (Schw.).
9. **Geoglossum farinaceum** *Schwz.* In meadows. Car. (Schwz.).

Gen. 9. PEZIZA.

Series I. ALEURIA *Fr.*

Sect. 1. MACROPODES.

1. **P. acetabulum** *Linn.* On the ground. Car. (Curt.); Ohio (Lea); N. Eng. (Frost).
2. **P. sulcata** *Pers.* On the ground. (Schwz.).
3. **P. cinnamomeo-lutescens** *Schwz.* Amongst leaves. Car. (Schwz.).
4. **P. mitrula** *Schwz.* Amongst leaves. Car. (Schwz.).

5. **P. hesperidea** *C. & P.*, Grev. 1, pl. 1, fig. 1. Amongst leaves. N. Y. (Peck).
6. **P. macropus** *P.* On the ground. Car. (Schw.; Curt.); N. Y. (Peck).
7. **P. rapulum** *Bull.* On the ground. Car. (Curt.).
8. **P. sordescens** *B. & C.* On the ground. Cups expanded (1 inch or more), at first orange yellow, disc bay; stem cylindrical, pallid, tomentose; sporidia elliptic, binucleate (.0005 inches). N. Eng. (Murray; Frost.)
9. **P. pallidula** *C. & P.* On old beech wood. Thin, wholly pallid, waxy; cup infundibuliform, at length flattened, nearly smooth; stem at first distinct, then abbreviated, pruinose, margin slightly incurved; asci cylindrical, sporidia elliptical (.0005 x .00035). N. Y. (Peck, No. 809).

Sec. 2. COCHLEATAE.

10. **P. aurantia** *Fr.* On the ground. Ohio (Lea); N. Y. (Peck); N. Eng. (Sprague).
11. **P. onotica** *P.* On the ground in woods. Car. (Schwz.).
[**P. unicisa** *Peck.* Appears to be a form of *P. onotica*]. N. Y. (Peck).
12. **P. obtecta** *Schwz.* Amongst rotten leaves. Car. (Schwz.).
13. **P. fulgens** *P.* In pine woods. Mass. (Schwz.).
14. **P. cochleata** *Linn.* On the ground amongst grass. Car. (Schw.; Curt.); N. Y. (Peck); N. Eng. (Sprague); Maine (Curt.).
15. **P. venosa** *P.* On the ground. Car. (Schwz.).
16. **P. costata** *Fr.*, Nov. Sym. On the ground. Onio (Lindblom).
17. **P. clypeata** *Schwz.* Amongst leaves. Car. (Schwz.).
18. **P. badia** *P.* In damp places. Car. (Schwz.); N. Y. (Peck).
19. **P. griseo-rosea** *Gerard.* On ligneous earth. Sessile (1 inch); cup fleshy, rather thin, hemispherical, then expanded, externally greyish ochre, rather mealy; disc pale rosy, subochraceous; asci cylindrical; sporidia elliptical, rough (.015–.018 x .0075–.01 m. m.). N. Y. (Gerard No. 41).
20. **P. atrovinosa** *Cooke.* On ground amongst grass. Sessile (1–2 inches); cup-shaped, then expanded and flattened smooth, dark vinous brown; disc of the same color; asci cylindrical, sporidia elliptical rugose (.0005 x .0003 inches). New Jersey (Ellis).
21. **P. succosa** *Berk.* On moist earth. Car. (Curt.); Conn. (Wright).
[***P. Schweinitzii** *B. & C.* Is undescribed and unknown to Rev. M. J. Berkeley].

Sec. 3. CUPULARES *Fr.*

a. Pustulatae.

22. **P. repanda,** var. *amplispora.* N. Y. (Peck).
23. **P. vesiculosa** *Bull.* On manured soil. Car. (Schw.); N. Eng. (Sprague); N. Y. (Peck).
24. **P. bufonia** *Pers.* In woods. Car. (Schw.).
25. **P. micropus** *P.* On earth. Car. (Schw.).
26. **P. pustulata** *Fr.* On trunks. Car. (Schw.); Ohio (Lea).

b. *Cupulatae.*

27. **P. catinus** *Holms.* On rotten wood. Car. (Schw.).

28. **P. carbonaria** *A. & S.* On burnt soil. Bethlehem (Schw.).

29. **P. pulchra** *Gerard.* Under pines. N. Y. (Gerard).

30. **P. cupularis** *Fr.* On burnt ground. Car. (Curt.); N. Eng. (Frost).

31. **P. diluta** *Fr.* On the ground. Bethlehem (Schw.).

32. **P. applanata** *Fr.* Bethlehem (Schw.).

33. **P. fuliginea** *Sch.* Bethlehem (Schw.).

34. **P. irrorata** *B. & C.* On soil. Cup-shaped, at length flattened, fuliginous (1 inch), broadly fixed beneath; sporidia uniseriate, elliptic, at length rough (.0004 inches); paraphyses clavate. Texas (M. J. B.).

35. **P. violacea** *Fr.* Amongst Kalmias. Car. (Schw.).

36. **P. membranacea** *Sch.* Bethlehem (Schw.).

37. **P. Spraguei** *B. & C.* On rotten wood. Flattened, margin incurved, externally pallid tomentose; disc rufous (¾ inches); asci linear, obtuse; sporidia elliptic, uniseriate (.0005 inches). Maine (Sprague); Car. (Curt.); N. Eng. (Frost).

[***P. velutina** *B. & C.* On ligneous earth. Undescribed and uncertain.]

38. **P. Petersii** *B. & C.* On burnt soil. Gregarious, crispate, externally pallid; disc bay-brown; sporidia elliptical, narrow, binucleate (.00038 inches); cups 1 inch or more. Alabama (Peters).

39. **P. decolorans** *B. & C.* On the ground. Cups small, obconical, whitish, then fuliginous; sporidia elliptical, binucleate (.00057 inches). Ala. (Peters).

40. **P. microspora** *B. & C.* On rotten wood. Small, gregarious, crowded and irregular, fleshy, fragile, externally pallid, pruinose, internally orange-yellow; stem very short or obsolete; sporidia small, elliptic, even, binucleate (.00028 inches). Car. (Rav.).

Sect. 4. HUMARIA.

a. *Sphaerosporae.*

40½. **P. sphaeroplea** *B. & C.* On burnt earth. Orange, pateraeform (2 lines), thinly clad with articulated flocci, asci linear, obtuse, paraphyses filiform, simple or branched, sporidia uniseriate (.0005 in). Car. (Curt).

41. **P. hinnulea** *B. & Br.* (*P. psammophila* B. & C.). On soil amongst grass, Car. (Curt).

42. **P. Wrightii** *B. & C.*, on trunks. Texas (M. J. B.).

43. **P. exasperata** *B. & C.* On burnt earth. Scarlet. Cups subglotose (½ inch) externally verruculose, margin inflexed. Sporidia globose, echinulate (.0005 in). Alabama (Peters).

b. *Ellipsisporae.*

44. **P. omphalodes** *Bull.* On burnt ground. Car. (Schw.; Curt.)

45. **P. melaloma** *A. & S.* On burnt ground. Car. (Curt); Conn. (Wright).

46. **P. granulata** *Bull.* On cow dung. Car. (Schw.); N. Y. (Peck).

47. **P. adusta** *C. & P.* On burnt ground. Gregarious or scattered. Cups subglobose, then open and hemispherical, at length plane, (1 line,) somewhat irregular when dry, brown, with a few radiating fibrils at the base ; disc amber yellow ; Asci cylindrical, sporidia elliptic, binucleate (.00066 × 00035 in.), paraphyses clavate, brownish. New York (Peck.)

48. **P. humosa** *Fr.* On the ground. N. Eng. (Frost).

49. **P. araneosa** *Bull.* Nazareth (Schw.).

50. **P. leucoloma** *Hedw.* Amongst moss. N. Y. (Peck). Car. (Schw.).

51. **P. rutilans** *Fr.* On the ground. Car. (Schw.).

52. **P. rubricosa** *Fr.* On earth. Car. (Schw.). N. Y. (Peck).

53. **P. glumarum** *Desm.* On rotting chaff. N. Eng. (Frost).

54. **P. ollaris** *Fr.* In pine woods. Car. (Schw.). Conn. (Wright).

55. **P. convexula** *Pers.* (*P. chrysophthalma* Gerard). N. Y. (Gerard).

56. **P. cremoricolor** *B.* On human ordure. Minute, flattened, pallid (1. line), paraphyses linear. Sporidia elliptic, even (.0006 in.). Car. (Curt.).

57. **P. spissa** *Berh.* On the ground. Cups irregular (¾ in.) margin lobed ; disc thick, bay, stem very short, whitish, sporidia elliptic, binucleate (.00057 in.). Ala. (Peters).

58. **Peziza Gerardi** *Cooke* (*Peziza violacea* Gerard). On the ground. Violaceous, sessile, fleshy. Cups hemispherical then flattened (2 lines broad), externally greyish violet, disc brighter. Asci cylindrical (.23 m. m. long). Sporidia fusiform (.032—035 × .008—009 m. m.), with a central nucleus, paraphyses filiform, clavate at the tips. N. Y. (Gerrard).

Series II. LACHNEA.

Sect. 1. SARCOSCYPHAE,

58½. **P. coccinea** *Jacq.* On fallen limbs. Car. (Curt.). N. Y. (Peck).

59. **P. floccosa** *Schw.* On fallen limbs. N. Y. (Peck). Ohio (Lea.).

60. **P. occidentalis** *Schw.* On branches. Ohio (Lea.; Schw.).

61. **P. tomentosa** *Schw.* On wood. Car. (Schw.).

62. **P. semitosta** *B. & C.* On the ground. Umber, internally bay brown. Cup hemispherical (1½ inch), produced into a rugose costate stem, margin inflexed, externally velvety, sporidia subfusiform, granulated (.00117 in.). Penn. (Mich.).

63. **P. pubida** *B. & C.* On the ground. Cups crowded, hemispherical (¾ inch), margin inflexed externally and short stem velvety, paraphyses brown sporidia fusiform, granulated (.001—0015 in.). Ala. (Peters).

64. **P. hirtipes** *Cooke.* On branches. Fleshy, cupshaped, substipitate. Cup (1–2 in.) hemispherical, dark brown, pubescent, margin incurved, disc paler, stem very short, nearly obsolete, attached by long shining, black hairs. Asci cylindrical, sporidia elliptical, paraphyses simple or furcate. Maine (E. C. B.).

65. **P. stygia** *B. & C.* Sides of moist banks. Small, black, cup turbinate, externally slightly hispid (½ inch), disc plano-concave, dark olivaceous, stem long, rooting, paraphyses linear, curved at the tips ; sporidia globose, even. Car. (M. J. B.).

66. **P. pusio** *B. & C.* On the soil. Cups hemispherical, with a thick, at length smooth stem, running into the cup in costate veins (1-1½ lines). Externally whitish, internally orange. Texas (Wright).

67. **P. alphitodes** *Berk.* On bark amongst moss; cups hemispherical, hispid as well as the elongated stem, margin undulated, sporidia subfusiform (.0004 in.). N. Eng. (Murray).

68. **P. nigrella** *Pers.* On wood and earth. Car. (Schw.). N. Y. (Peck).

69. **P. hemispherica** *Wigg.* On wood and earth. Car. (Schw.; Curt.); N. Y. (Peck). Maine (Curt.).

70. **P. brunnea** *A. & S.* On burnt ground. Car. (Schw.).

71. **P. pellita** *C. & P.* (Grev. 1. pl. 1, fig. 3.) On soil. N. Y. (Peck).

72. **P. confusa** *Cooke* (*Peziza brunnea* Karsten). On the ground. N. Y. (Gerard). Sporidia globose .015, m. m.

73. **P. fusicarpa** *Gerard.* Amongst moss. N. Y. (Gerard).

74. **P. carneo-rufa** *Mart.* On the ground. (Schw.).

75. **P. albo-cincta** B. *& C.* On the ground. Cups scarlet (1. line), concave, externally and margin furnished with snow white flocci. Sporidia elliptic, echinulate (.0008 x .0006 in.). Car. (Rav.). N. Eng. (Murray).

76. **P. Texensis** *B. & C.* Cups flattened, dingy orange; externally beset with a few pallid fusiform septate bristles, which are bulbous at the base, margin ciliate; sporidia elliptic, coarsely granulated (.0006 in). Texas (Wright).

77. **P. setosa** *Nees.* On trunks. (Schw.).

78. **P. erinaceus** *Schw.* On rotten trunks. Car. (Schw.).

79. **P. scutellata** *L.* On wood &c. Mass. (Curt.).; Car. (Schw., Curt., Rav.); Maine (Bolles); Ohio (Lea).

80. **P. stercorea** *P.* On dung and rich soil. Car. (Schw.); N. Y. (Peck).

81. **P. theleboloides** *A. & S.* On spent hops, manure &c. Car. (Schw.); N. Y. (Peck).

82. **P. diversicolor** *Fr.* On dung. Car. (Schw.); N. Eng. (Sprague).

83. **P. decipiens** *B. & C.* On pine leaves (species undescribed).

Sect. II. DASYSCYPHAE,

a. *Sessiles.*

84. **P. hyalina** *P.* On wood. Car. (Schw.).

85. **P. papillaris** *Fr.* On wood and bark. Car. (Schw.).

86. **P. variecolor** *Fr.* On stems, trunks &c. Car. (Schw.; Curt.).

87. **P. triformis** *Fl. Dan.* On *Rhus* wood. Bethlehem (Schw.).

88. **P. balsamicola** (*Nodularia balsamicola* Peck). On bark of Balsam. N. Y. (Peck).

89. **P. flammea** *A. & S.* (*P. maculincola* Schw.). On branches. (Schw.).

90. **P. leonina** *Schw.* On Elm wood. Car. (Schw.).

91. **P. cinnabarina** *Sch.* On wood of *Liquidambar.* Car. (Schw.).

92. **P. flavo-fuliginea** *A. & G.* On rotten wood. Car. (Schw.)

93. **P. fulvo-cana** *Schw.* On disc of stump. Car. (Schw.).

94. **P. virescens** *A. & S.* On stems. Bethlehem (Schw.).

95. **P. incarnescens** *Sch.* On decorticated wood. Bethlehem (Schw.).

96. **P. Schumacheri** *Fr.* On stumps. Bethlehem (Schw.).

97. **P. atrofuscata** *Schw.* On wood. Bethlehem (Schw.).

98. **P. hispidula** *Schr.* On *Sambucus*. Penns. (Schw.).

99. **P. corvina** *Pers.* On wood. Bethlehem (Schw.).

100. **P. subochracea** *C. & P.*, in Grev. 1, pl. 1, fig. 4. On *Rubus*. N. Y. (Peck).

101. **P. rufo-olivacea** *A. & G.* On stems of *Rubus*. Car. (Schw.).

102. **P. vitis** *Schwz.* On bark of *Vitis*. (Schw.).

103. **P. roseola** *Schw.* On stems. Bethlehem (Schw.).

104. **P. penicillata** *Schw.* On bark of *Vitis*. Car. (Schw.).

105. **P. corticalis** *Pers.* On bark. Car. (Schw.).

106. **P. spadicea** *Pers.* On wood. Bethlehem (Schw.).

107. **P. cinereo-fusca** *Schwz.* On wood and bark. (Schwz.).

108. **P. Eupatorii** *Schw.* (*P. solenia* Peck). On *Eupatorium*. Bethlehem (Schw.). N. Y. (Peck).

109. **P. sulphurea** *P.* On chips and stems. Car. (Schw.; Curt.).

110. **P. relicina** *P.* On herbaceous stems. Bethlehem (Schw.).

111. **P. fuscobarbata** *Schw.* On stems of *Verbascum*. Bethlehem (Schw.).

112. **P. rufiberbis** *Schw.* On stems. Bethlehem (Schw.).

113. **P. strigosa** *P.* On stems of Umbellifers. Car. (Schw.).

114. **P. comata** *Schw.* On oak leaves. N. Y. (Peck). (Schw.).

115. **P. pollinaria** *Cooke.* On oak leaves. Epiphyllous, subgregarious, minute soft, sessile, pallid, clad with very short pulverulent white hairs, resembling white meal; cups globose, at length opening by a small central orifice; asci cylindrical; sporidia elliptical, minute. N. Jersey (Ellis 2158).

116. **P. marginata** *Cooke.* On oak leaves &c. Scattered or gregarious, brownish, sessile, fringed at the margin with septate brown hairs, disc paler; asci cylindrical, minute; sporidia spermatozoid. N. Jersey (Ellis 2151).

117. **P. episphaeria** *Mart.* On *Hypoxylon*. Bethlehem (Schw.).

[**P. villosa** *P.* is a *Cyphella*, as also *P. albo-violascens* and *P. punctiformis* Fr.]

b. Stipitatae.

118. **P. nivea** *Fr.* On wood. Car. (Curt.). N. Y. (Peck).

119. **P. ochracea** *Schw.* On pine wood. Penn. (Schw.).

120. **P. cerina** *Pers.* On wood, palings &c. Car. (Curt.).

121. **P. calyculaeformis** *Sch.* On rotten wood. Bethlehem (Schw.).

122. **P. virginea** *Batsch.* On sticks, twigs &c. Car. (Schw.; Curt.); N. Y. (Peck).

123. **P. bicolor** *Bull.* On oak twigs, &c. (Schw.).

124. **P. calycina** *Sch.* On pine branches. Car. (Schw.; Curt.); N. Y. (Peck).

125. **P. Agassizii** *B. & C.* On bark of *Abies*. Car. (Curt.; Rav.); N. Y. (Peck); N. Hamp. (Bolles).

126. **P. pithya** *Pers.* On twigs of conifers. (*Sarea pithya* Schw.). Penn. (Schw.).

127 **P. cupressina** *Batsch.* (*Helotium thujinum* Peck). Car. (Curt.); N. Y. (Peck); Conn. (Wright); N. Jersey (Ellis).
128. **P. clandestina** *Bull.* On branches. Car. (Curt.); N. Y. (Schw.).
129. **P. turbinulata** *Schw.* On bark of *Castanea.* U. S. (Schw.).
130. **P. luteo-alba** *Schw.* On bark. Bethlehem (Schw.).
131. **P. prolificans** *Schw.* On disc of trunks. Car. (Schw.).
132. **P. aranea** *Not.* On bark. Car. (Rav.).
133. **P. translucida** *B. & C.* On twigs of *Castanea.* Minute, gregarious, cups hemispherical, margin inflexed; stem very short. Penn. (Mich.).
134. **P. caulicola** *Fr.* On stems. Car. (Curt.).
135. **P. stipiticola** *Schw.* On stems. Bethlehem (Schw.).
136. **P. ciliaris** *Schw.* (On side of trunks?) Car. (Schw.).
137. **P. albopileata** *Cooke.* On leaves of *Magnolia*, scattered or subgregarious, stipulate, dirty white then ochraceous, stem slender, nearly naked; cup soon flattened, clad externally with short white hairs, disc discolored, sporidia linear minute. (Plant larger than *P. ciliaris*). N. Jersey (Ellis).
138. **P. patula** *P.* On leaves. Car. (Schw.).
139. **P. puberula** *B. & C.* On fallen ash leaves. Cups globose, fawn color, furfuraceous tomentose; stem short, pallid; disc concolorous. Car. (Rav.).
140. **P. fuscescens** *P.* On beech leaves. Car. (Schw.); N. Y. (Peck).
141. **P. pulvurulenta** *Lib.* On fir leaves. N. Y. (Peck).
142. **P. subhirta** *Schw.* On leaves. Bethlehem (Schw.).
143. **P. plagiopus** *Weinm.* On grass. Bethlehem (Schw.).
144. **P. cannea** (*P. arundinariae*, B.). On *Arundinaria.* Small; cups cyathiform; externally white tormentose; stem at length smooth; disc concave, pallid umber. Car. (M. J. B.).
145. **P. sphaerincola** *Schwz.*, on *Sphaeria.* Bethlehem (Schw.).

Sec. 3. TAPESIA,

[**P. anomala** *P.*, is *Solenia ochracea.*]
146. **P. arachnoidea** *Schwz.* On moist wood. Bethlehem (Schw.).
147. **P. caesia** *Pers.* On oak wood. Car. (Curt.).
148. **P. stipata** *Fr.* On wood. Bethlehem (Schwz.).
149. **P. discincola** *Schwz.* On disc of trunk. Bethlehem (Schw.).
150. **P. candidofulva** *Schwz.*, On bark. Bethlehem (Schw.).
151. **P. Hydrangeae** *Schwz.* On dead *Hydrangea.* Car. (Schw.; Curt.).
152. **P. poriaeformis** *D. C.* On willow. Car. (Schw.).
153. **P. Rosæ** *Pers.* On rose branches. Car. (Schw.; Curt.).
154. **P. aurelia** *Pers.* On rotten wood, &c. Car. (Curt.).
155. **P. annulata** *Holms.* On wood. Bethlehem (Schw.).
156. **P. armeniaca** *Pers.* On stems. Bethlehem (Schw.).
157. **P. Bloxami** *B. & Br.* On rotten wood. Car. (Curt.).
158. **P. daedalea** *Schw.* On bark of *Carya, Acer,* &c. Car. (Schwz.; Curt.).
159. **P. griseopulveracea** *Schwz.* On branches. Bethlehem (Schw.).
[**P. pruinata** *Schwz.*, is *Arthonia confluens.*]

160. **P. sanguinea** *P.* On rotten wood. Maine (E. C. B.) Car. (S.).

161. **P. megaloma** *Schwz.* On rotten wood. Bethlehem (Schw.).

162. **P. fusca** *Pers.* On bark of elder. Car. (Schw.); Conn. (Wright); N. Y. (Peck).

163. **P. mollisiaeoides** *Schw.* On rotten wood. N. Eng. (Frost); N. Y. (Peck); Mass. (Curt.).

164. **P. subiculata** *Schwz.* On wood. Car. (Curt.); N. Eng. (Sprague).

Sec. 4. FIBRINA.

165. **P. bolaris** *Batsch.* On fir sticks. Car. (Schw.).

166. **P. membranata** *Schw.* On wood. Bethlehem (Schw.).

167. **P. sericea** *A. & S.* On wood. Car. (Schw.).

168. **P. ceracella** *Fr.* On bark. Bethlehem (Schwz.).

169. **P. vixvisibilis** *Schw.* Interior of chestnut bark. Bethlehem (Schwz.).

170. **P. elatina** *A. & S.* On *Abies Canadensis.* Car. (Schw.).

171. **P. pomicolor** *B. & R.* On bark of *Taxodium.* Scattered, subhemispherical, soon open; externally apple color, furfuraceous; disc olivaceous. Car. (Rav.).

172. **P. ascoboloidea** *Schw.* On bark of *Vitis.* Bethlehem (Schw.).

173. **P. lentaginis** *Schw.* On branches of *Viburnum.* New Jersey (Schw.).

174. **P. opulifoliæ** *Schw.* On branches of *Spiraea.* Bethlehem (Schw.).

175. **P. roseoalba** *Schwz.* On bark of *Cornus.* Car. (Schw.).

176. **P. solitaria** *Schwz.* On stems. Bethlehem (Schw.).

177. **P. cedrina** *Cooke.* On branches of *Juniperus Virginiana.* Scattered, pitch brown, externally fibroso-rugose; cups globose, soon open, and cup-shaped (1 m. m.); margin contracted; disc slightly paler; asci cylindrical; sporidia oval (scarcely mature .02 x .01 m. m.); paraphyses profuse, clavate, and slightly curved at the tips. N. Y. (Gerard 48).

Series III. PHIALEA.

Sec. 1. HYMENOSCYPHA.

178. **P. tuberosa** *Bull.* On the ground. Car. (Curt.).

179. **P. ciborioides** *Fr.* Amongst leaves. Car. (Curt.).

180. **P. gracilipes** *Cooke.* On petals of *Magnolia.* Cups membranaceous, brownish, discoid, flattened, stem long, slender, capillary, darker, smooth, equal, springing from a flattened rugose black sclerotium; asci cylindrical; sporidia oblong (stem 1 inch, cup 1 line). N. Jersey (Ellis).

181. **P. Peckiana** *C.* (*Helotium macrosporum* Peck). On decaying beach wood. N. Y. (Peck).

182. **P. imberbis** *Bull.* On wood. Bethlehem (Schw.).

183. **P. albumina** *C. & P.* On wood; chips. N. Y. (Peck).

184. **P. crocea** *Schwz.* On sticks. Car. (Curt.).

185. **P. firma** *Pers.* On trunks, sticks, &c. Car. (Schw.; Curt.); N. Eng. (Sprague).

186. **P. echinophila** *Bull.* On chestnut capsules, &c. Bethlehem (Schw.).

187. **P. longipes** *C. & P.* On leaf petioles. Yellowish; cups concave (2″–3″) shallow, at length nearly plane; disc sometimes reddish yellow; stem very long (1 inch or more), equal, slender; asci cylindrical; sporidia narrowly elliptical, straight or curved, uninucleate (.0005–.0006 × .0002–.00025 m.). N. Y. (Peck, 301).

188. **P. coronata** *Bull.* On stems. Car. (Schw.); N. Y. (Peck).

189. **P. cyathoidea** *Bull.* On herbaceous stems. Car. (Schw.); N. Y. (Peck); N. Eng. (Sprague).

190. **P. striata** *Nees.* On herbaceous stems. Bethlehem (Schw.).

191. **P. nigrescens** *Cooke.* On stems of *Erigeron.* Stipitate, dark brown, nearly black, small, firm; cups at first clavate, then expanded and plane; margin elevated; disc paler, dingy gray; stem twice as long as the diameter of the cup, equal below, expanding into the cup; sporidia subfusiform, straight or curved, at first binucleate. New Jersey (Ellis, 1022).

192. **P. perula** *Pers.* On stems. Bethlehem (Schw.).

193. **P. clavata** *Pers.* On bark of *Robinia.* Bethlehem (Schwz.).

194. **P. campanula** *Nees.* On stems of umbellifers. Car. (Schwz.).

195. **P. Persoonii** *Moug.* On *Equisetum.* N. Y. (Peck).

196. **P. pyriformis** *Fr.* On mosses. Car. (Schw.).

197. **P. subcarnea** *C. & P.* On *Jungermannia.* Scattered, very minute, stipitate, pale flesh color, at first clavate; asci cylindrical; sporidia minute, hyaline, linear, spermatozoid. (Cups scarcely visible to the naked eye.) N. Y. (Peck).

[**Peziza capula,** is a *Cyphella.*]

Sec. 2. MOLLISIA.

198. **P. citrinella** *Schw.* On wood (*Salix*). (Schw.).

199. **P. cinerea** *Batsch.* On wood. Car. (Schw.; Curt.); N. Eng. (Frost).

200. **P. xanthostigma** *Fr.* On wood. Bethlehem (Schw.).

201. **P. leucostigma** *Fr.* On wood. Ohio (Lea); Bethlehem (Schw.).

202. **P. diaphanula** *Cooke.* On wood. Gregarious, soft, very minute ($\frac{1}{10}$ m. m.); cups hyaline, whitish, becoming pallid, hemispherical, soon flattened; asci clavate; sporidia elongated, elliptical, uninucleate (.017–.02 × .008 m. m.); paraphyses linear. N. Jersey (Ellis, 2161).

203. **P. introspecta** *Cooke.* On wood. Gregarious or scattered, minute ($\frac{3}{10}$–$\frac{4}{10}$ m. m.); cups sessile, hemispherical, then cup-shaped and flattened, pallid watery white, externally brownish; asci clavate, stipitate; sporidia narrowly fusiform, 3–4 nucleate, then faintly 3–5 septate (.04–.045 × .008 m. m.); paraphyses linear. N. Jersey (Ellis, 2160).

204. **P. dentata** *P.* On wood. Bethlehem (Schw.).

205. **P. rubella** *P.* On wood and bark. Car. (Schw.; Curt.); N. Eng. (Sprague); Ala. (Rav.).

206. **P. rufula** *Schw.* On wood. Bethlehem (Schw.).

207. **P. sanguinolenta** *S,* On wood. Bethlehem (Schw.).

208. **P. crocitincta** *B. & C.*, Grev. 1, pl. 1, fig. —. On wood. Car. (Rav.: Curt.).

209. **P. vincta** *C. & P.* On decaying wood. N. Y. (Peck).

210. **P. pusilla** *Fl. Dan.* On trunks. Bethlehem (Schw.).

211. **P. uda** *P.* On trunks. Car. (Schw.).

212. **P. vinosa** *A. & S.* On branches. Car. (Schw.).

213. **P. vulgaris** *Fr.* On wood and bark. Car. (Curt.).

var. SANGUINELLA (*P. sanguinella* B. & C.). Car. (Curt.).
var. MYCETICOLA (*P. myceticola* B. & C.). Conn. (Wright); Car. (Curt.).

214. **P. conchella** *Schw.* On bark. Bethlehem (Schw.).

215. **P. cruenta** *Schw.* On bark. Bethlehem (Schw.).

216. **P. lividofusca** *Fr.* On bark. (Schw.).

217. **P. multophthalma** *B. & C.* On *Cornus florida.* Minute, hemispherical, externally black, internally vermilion; asci linear; paraphyses flexuose; sporidia oblong, minute, hyaline. Car. (Curt.).

218. **P. lacerata** *C. & P.* On stems of *Rubus.* N. Y. (Peck).

219. **P. fracta** *B. & C.* On *Hydrangea.* Minute, erumpent, black, subglobose; mouth punctiform, then expanded and broken; asci clavate; sporidia biseriate, oblong, clavate, hyaline. Va. (Mount); Car. (Rav.).

220. **P. fibriseda** *B. & C.* On *Ulmus Americana.* Orange, irregular, externally sprinkled with saccharine particles; margin laciniate and broken; disc concave. (fruit imperfect.) Va. (Mount).

221. **P. saccharifera** *B. & C.* On *Liquidambar.* Soft, gregarious, pallid orange, irregular, externally sprinkled with saccharine particles; margin rather tumid; disc concave. Ala. (Peters).

222. **P. Russellii** *B. & C.* On bark. Erumpent, fasciculate, brick red; margin obtuse; disc slightly concave; asci clavate; sporidia biseriate, oblong, narrowed toward each end, at length uniseptate (.0006 inches long). N. Eng. (Russell).

223. **P. Taxodii** *B. & C.* On bark of *Taxodium.* Cups externally black; disc concave, pallid cinereous, margin inflexed; asci clavate, broad. sporidia quaternate, large, obovate, fenestrate (.003 inches). Car. (Curt.).

224. **P. Kalmiae** *Peck.* On stems of *Kalmia.* (Not having seen this, I cannot tell to what section it belongs.

225. **P. cucurbitae** *Gerard.* On gourds. N. Y. (Gerard).

226. **P. assimilis** *C. & P.*, in Grev. 1, pl. 1, fig. —. On *Aster.* N. Y. (Peck).

227. **P. erigeronata** *Cooke.* On stems of *Erigeron.* Gregarious, soft; cups hemispherical, then flattened, externally smooth, dark umber, becoming black; disc livid cinereous, margin slightly elevated; asci short, broadly clavate; sporidia biseriate or crowded linear-elliptic. New Jersey (Ellis).

228. **P. exigua** *Cooke.* On stems of *Erigeron.* Scattered, very minute, red, sessile, tremellose; cups hemispherical, then plane or convex; margin nearly obsolete; asci small, lanceolate; sporidia minute, linear, hyaline. N. Jersey (Ellis).

229. **P. Dehnii** *Rabh.* On living *Potentilla.* N. Y. (Peck).

230. **P. pulviscula** *Cooke*. On stems of *Phytolacca*. Gregarious, very minute, like grains of sugar, soft, almost tremelloid; cups globose, then flattened, smooth, pallid, watery yellowish white; asci cylindrical; sporidia very minute. Cups $\frac{4}{10}$ m. m. broad; asci .03 x .005 m. m. N. Y. (Gerard).

231. **P. Pteridis** *Desm*. On stems of *Pteris*. Bethlehem (Schw.).

232. **P. atrocinerea** *Cooke*, Fungi Britt. On *Polygonum*. N. Y. (Peck, No. 352).

233. **P. brassicaecola** *B*. On cabbage stems. Thin, expanded, flexuous, externally and internally rufous; sporidia elliptic, concatenate, uninucleate (.0004 inches). N. Eng. (Sprague).

234. **P. exidiella** *B. & C*. On herbaceous stems. Gregarious, regular, externally and internally rufous yellow; asci clavate; sporidia oblong, narrow, hyaline (.00028 inches). Conn. (Wright).

235. **P. diluteIla** *Fr*. On herbaceous stems. Bethlehem (Schw.).

236. **P. Arundinariae** *B. & C*. On *Arundinaria*. Flattened, soon deciduous, pitch brown, seated on an orbicular spot-like mycelium; disc pallid. Car. (Curt.).

237. **P. stenostoma** *B. & C*. On *Andropogon*. Erumpent, elongated, quite black, mouth narrow; asci clavate; sporidia oblong, narrow, uniseriate, binucleate. Car. (Curt.).

238. **P. Andropogonis** *B. & C*. On *Andropogon*. Cups at first closed, black, at length expanded, margin undulated; disc yellowish bay; asci clavate; sporidia biseriate oblong, narrowed toward each end, triseptate (.0006 inches). Car. (Curt.).

239. **P. atriella** *Cooke*. On *Andropogon*. Gregarious, sessile, soft, minute; cups at first hemispherical, soon flattened (.02 m. m.), slightly marginate, black, smooth; disc dark cinereous, becoming blackish; asci subclavate; sporidia narrowly fusiform (.03 x .0025 m. m.), with a row of nuclei; paraphyses filiform. N. Jersey (Ells, 2231).

240. **Peziza cervinula** *Cooke*. On dead *Carex*. Subgregarious, sessile, very minute; cups globose, at first pierced, then open, hemispherical, contracted at the paler margin, externally fawn color (0.1–0.2 m. m.); disc whitish; asci clavate (.04 m. m.); sporidia cylindrical, straight or curved, simple (.012–.014 x .002 m. m.). New Jersey (Ellis, 2226).

241. **P. umbonata** *P*. On leaves. Car. (Curt.).

242. **P. protrusa** *B*. On dead leaves of *Magnolia*. Erumpent, punctiform, here and there encircled by the epidermis; mouth flexuose, externally granulated, chestnut color; disc concave, white; sporidia oblong, cylindrical (.0003-.0005 inches). Car. (Curt.). New Jersey (Ellis).

243. **P. pinastri** *C. & P*. On leaves of *Pinus rigida*. Sessile, soft, scattered, at first sprinkled with an evanescent whitish meal, soon naked and greyish brown hemispherical, then plane; margin often lacerated; disc paler, pallid grey; asci cylindrico-clavate; sporidia narrowly lanceolate, obtuse (.0005–.0006 inches). N. Y. (Peck, 349).

244. **P. olivaceolutea** *B. & C*. On dead leaves. Minute, erumpent, very deciduous, externally olivaceous, margin whitish; disc concave, pallid yellow. (So deciduous that specimens are preserved with difficulty.) Car. (Curt.).

245. **P. axillaris** *Nees.* On mosses (*Splachnum*). (Schw.).
[**Peziza Resinae** *Fr.*, is now admitted to be a Lichen. See Grevillea, Vol. 2.]
246. **P. Ravenelii** *B. & C.* On *Hysterium*. Car. (Curt.).

Sec. 3. PATELLEA.

247. **P. compressa** *P.* (*P. nigro-punctula* Gerard.) On wood. Car. (Curt.; Schw.); N. Y. (Peck; Gerard).
248. **P. corrugata** *C. & P.* On wood. N. Y. (Peck).
249. **P. viticola** *P.* On twigs. (Schw.); N. Y. (Peck).
250. **P. philadelphi** *Schw.* On twigs. Bethlehem (Schw.).
251. **P. corneola** *C. & P.* N. Y. (Peck).
252. **P. glandicola** *Schw.* On nuts. Bethlehem (Schw.).

Gen. 10. HELOTIUM.

a. Pelastea.

1. **H. aciculare** *Bull.* On stumps. Car. (Schw.).
2. **H. subtile** *Fr.* On fir leaves. Penn. (Schw.); New Jersey (Ellis).
3. **H. fimetarium** *P.* On dung. Car. (Schw.).
4. **H. flavovirens** *Fr.* On wood. Bethlehem (Schw.).
5. **H. aureum** *P.* On trunks. Car. (Schw.).
6. **H. serotium** *Fr.* On stick. Car. (Schw.).
7. **H. acericolum** (*Nodularia acericola* Peck). On maple sticks. N. Y. (Peck).
8. **H. fructigenum** *Bull.* On beech mast. Conn. (Wright).
9. **H. lutescens** *Hedw.* On sticks. Car. (Schw.).
10. **H. conigenum** *P.* On fir cones. Penn. (Schw.).

b. Calycella.

11. **H. Tuba** *Bull.* On branches. Car. (Schw.).
12. **H. Buccina** *Fr.* On wood. Car. (Schw.); N. Eng. (Frost).
13. **H. phialea** *Fl. Dan.* On branches. Bethlehem (Schw.).
14. **H. calyculus** *Sow.* On wood. Bethlehem (Schw.).
15. **H. Aspegrenii** *Fr.* On wood. Bethlehem (Schw.).
16. **H. citrinum** *Fr.* On wood. Car. (Schw.; Curt.); Ohio (Lea); N. Y. (Peck; Gerard).
17. **H. confluens** *Schw.* On wood. Bethlehem (Schw.); N. Y. (Gerard).
18. **H. pallescens** *P.* On wood. Car. (Schw.); N. Eng. (Frost).
19. **H. pullatum** *Gerard.* On stems of *Vitis*. Gregarious (1–2 m. m.), dark, dingy ochre when fresh, becoming fuliginous when dry, at first clavate, then somewhat obconical, externally darker; stem short, expanding into the cup; disc plane, concave when dry; asci—. N. Y. (Gerard).
20. **H. vaccinum** *Schum.* On cow dung. (Schw.).
21. **H. chionaeum** *Fr.* On fir leaves. Nazareth (Schw.).
22. **H. rugipes** *Peck.* On rotten wood. N. Y. (Peck).
23. **H. lenticulare** *Bull.* On stumps. Car. (Schw.); N. Y. (Peck).

24. **H. nigripes** *Schum.* On branches. Car. (Schw.).
25. **H. salicellum** *Fr.* On twigs. N. Jersey (Schw.).
26. **H. luteovirens** *Fr.* On branches. Bethlehem (Schw.).
27. **H. ferrugineum** *Schum.* On wood. N. Eng. (Frost); Salem (Schw.).
28. **H. albovirens** *Cooke.* On wood of maple. Scattered or subgregarious; pale greenish white; sessile, attached beneath by white arachnoid threads; cups convex, at length nearly plane, darker when dry (1. m. m.); asci cylindrical; sporidia cylindrical, obtuse, straight or curved, simple (.018 x .003 m. m.). N. Jersey (Ellis, 2227).
29. **H. disciforme** *Fr.* On branches. Bethlehem (Schw.).
30. **H. leguminum** *Schw.* On legumes. Bethlehem (Schw.).
31. **H. herbarum** *P.* On herbaceous stems. Car. (Schw.); N. Y. (Peck); N. Eng. (Murray).
32. **H. pastinacum** *Schw.* On parsnip. Bethlehem (Schw.).
33. **H. limonium** *C. & P.* On stems. N. Y. (Peck).
34. **H. gracile** *C. & P.* On stems. N. Y. (Peck).
35. **H. fagineum** *P.* On twigs. Bethlehem (Schw.).
36. **H. epiphyllum** *P.* On leaves. Car. (Schw.); N. Jersey (Ellis); N. Y. (Peck).
37. **H. naviculaesporum** *Ellis.* On decaying leaves. Whitish, then ochraceous, stipitate, cups plane convex (.05 in.), disc slightly darker; asci broad; sporidia boat-shaped (.001 inch), obscurely septate. New Jersey (Ellis).
38. **H. renisporum** *Ellis.* On decaying leaves. Stipitate (⅛–1 line) convex, then plane (concave when dry); pale cinnamon, or brownish yellow; stem (⅛–¼ in.), darker below; equal slender; asci subcylindrical; sporidia reniform (.0008 in.). New Jersey (Ellis).

Gen. 11. CHLOROSPLENIUM *Fr.*

1. **C. Schweinitzii** *Fr.* (*Peziza chlora* Schw.). On wood. Car. (Curt.; Rav.; Schw.); New Jersey (Ellis).
2. **C. repandum** *Fr.* (*Peziza chlorascens* Schw.). On wood.
3. **C. subtortum** *Fr.* (*Peziza torta* Schw.). On old wood. Car. (Schw.).
4. **C. versiformis** *Fr.* On wood. Car. (Curt.); Conn. (Curt.).
5. **C. aeruginosum** *Fr.* On wood. Car. (Curt.).
6. **C. virescens** *Fr.* (*Peziza atrovirens* Fr.). On wood. Car. (Schw.; Curt.).
7. **C. epimyces** *Cooke.* On old *Corticium.* Cups sessile, greenish yellow, then olivaceous, pulverulent (1. line), plane, disc paler; asci clavate; sporidia biseriate, broadly fusiform (.02 x .01 m m). The pulverulent granules are globose and brown under the microscope and about .007 m. m. diameter. New Jersey (Ellis).

Gen. 12. PSILOPEZIA. B.

1. **P. nummularia** *B.* On rotten wood. Car. (Curt.); Ohio (Lea.); Penns. (Mich.).
2. **P. Babingtonii** *B.* On rotten wood. Car. (Rav.).
3. **P. flavida** *B. & C.* On dead wood. Alabama (Peters.).

Gen. 13. RHIZINA *Fr.*

1. **P. undulata** *Fr.* On the ground. Car. (Curt.).

Order II. BULGARIACEI.

Gen. 1. ASCOBOLUS *Fr.*

1. **A. furfuraceus** *P.* On cow dung. Car. (Curt.).
2. **A. glaber** *P.* On dung. Car. (Schw.).
3. **A. ciliatus** *Sch.* On dung. N. Y. (Peck); Car. (Rav.).
4. **A. immersus** *P.* On dung.

Gen. 2. ASCOPHANUS *Boud.*

1. **A. papillatus** *Boud.* On dung. Car. (Schw.).

Gen. 3. OMBROPHILA *Fr.*

1. **O. purpurascens** *Fr.* (*Peziza clavus vara*). N. Jersey (Ellis).
2. **O. violacea** *Fr.* (*Peziza clavus* var. *b.*). N. Jersey (Ellis).
3. **O. lilacina** *Wahl.* (*Peziza lilacina* S.) (Schw.).
4. **O. subaurea** *Cooke.* On cedar twigs in swamps. N. Jersey (Ellis). Turbinate or obconical, pallid then pale orange, subtremelloid; Disc plane (2 m. m.); margin often waved or crenate; asci cylindrical; sporidia fusiform, granular, .03 x .005 m. m.; parayhyses filiform, branched or simple.

Gen. 4. BULGARIA *Fr.*

1. **B. globosa** *Fr.* Earth in woods. (Schw.).
2. **B. inquinans** *Fr.* On oak logs. N. Y. (Gerard); Car. (Curt.; Rav.).
3. **B. pulla** *Fr.* On pine wood. (*Lemalis Pulla*, Schw.)
4. **B. rufa** *Schum.* On rotten sticks. Car. (Curt.).
5. **B. sarcoides** *Fr.* On sticks and trunks. Car. (Curt.).
6. **B. purpurea** *Fckl.* On trunks. N. Jersey (Ellis).

Gen. 5. VIBRISSEA *Fr.*

1. **V. truncorum** *Fr.* On wood. Car. (Schw.); N. Y. (Peck); N. Eng. (Sprague).

Gen. 6. SAREA, *Fr.*

1. **S. brassicaecola** *Schw.* On cabbage stems. (Schw.).

This is an uncertain species and requires examination and verification.

XXIII. On the Genus Agrotis with Additions to the "List of North American Noctuidae"

BY AUG. R. GROTE.

[*Read before this Society March 5th*, 1875.]

In my "List of the Noctuidae" I have stated that my arrangement of the species of this genus was provisional. Up to the present time I am still without sufficient material to enable me to adapt our American species to the classification of Lederer, who divides the European species into nine primary groups (A to I). The principal character used by Lederer is the form of the *genitalia.* He then appears to give weight to the form of the antennae, then to the spinosity of the tibiae, then to the shape of the abdomen and then to the vestiture of the thorax. This latter character is used by Lederer to form a subsection for *linogrisea,* a species not known to me. A proper study of these characters can only be made from large material, and, in its absence, I have only the following notes to make on some of our species.

Agrotis gilvipennis *Grote.*

This species, from Anticosti, is our only described species with yellow secondaries. It is stated by Prof. Zeller to be allied to *Chardinyi,* a Russian species, which I do not know. Lederer gives unarmed fore tibiae for *Chardinyi.* Two of my three specimens of *gilvipennis* seem to me to show spines on the fore tibiae. The tibiae are not strongly spinose in this species. On the third specimen I can see no spines, but the spines frequently break off, and hence we cannot be sure of their absence from an examination of single specimens.

Agrotis haruspica *Grote.*

The fore tibiae are spinose. This species is published by Dr. Speyer as *A. augur* var. *grandis*, in an extremely valuable paper in which the relationship between allied forms of Noctuidae in North America and Europe are discussed. All such closely allied forms must have descended from some common progenitor, and I have suggested that the separation may have occurred in later Tertiary times, and is the effect of the change in temperature during the Glacial Period. The effect of a gradual increase in cold would have been to drive the members of the Artogaeal fauna southward and separate geographically the European and American species. There appear, as previously noticed by Dr. Le Conte in the Coleoptera, to be various grades of relationship between species now existing in Europe and America. While some are absolutely identical, others may be distinguished by various grades of distinctional character, grades that could only have been brought about by gradual changes, and yet which, in the Noctuidae, as Dr. Speyer interestingly shows, have some common direction of variation in color that is apparently the result of climatic conditions. The specific name quite evidently loses some of its hitherto accepted force as applied to these forms. Nevertheless, where we can constantly separate the forms, different names should be employed for the sake of exactness of definition. The present name was published January 20th, 1875, and was proposed to replace that of *unimacula,* given to the species by Mr. Morrison, a name previously used by Dr. Staudinger for an Andalusian species.

Agrotis exsertistigma *Morrison.*

I have previously considered this specific name to apply to *alternata* Grote. At that time I was guided by Mr. Morrison's brief comparative description and my California material of *cupidissima* Grote. I have now returned to me my specimen by Mr. Morrison, and I find it to be distinct from either *alternata* or *cupida,* with neither of which should it have been compared by its describer, for the abdomen is not flattened, but conical. It must therefore be referred to a different subsection of the genus. I myself been mistaken in regarding *alternata* as Californian; ıriable Californian specimens, in some of which the orbicular en, belonging apparently to a distinct species which I have .bed as *cupidissima*.

:is incivis *Guenée.*

. Morrison sends me a specimen of my *Anicla Alabamae* as this :s, which is briefly described by Guenée, who makes no men- ›f the exterior dotted line on the primaries. The name *Anicla* be used as a sectional one for the species which is, as I have ed out, essentially an *Agrotis* in its spinose tibiae, but appears fer by the smooth thorax, which is clothed with narrow scales r than hairs. I may have given too much weight to its gies with *Laphygma*. Mr. Morrison's *simplicius* and Guenée's :ans, are apparently related forms.

tis obeliscoides *Guenée.*

ow believe that the species from the Eastern Slope, that I have ibed as *sexatilis*, is the same with that described by Guenée in pecies Général under the above name. From California I have ·ed three specimens, under the number 30 (red label), from Mr. :ns. They differ by the narrower, more lunulate reniform. orbicular is variable in shape, while the costal region is not entiated. I have a specimen of *sexatilis* from Colorado, and characters may be found to be inconstant over so wide a :h of country.

.th regard to the question of "representative" species, I would :st that geographically separated forms in the Noctuidae exhibit lly some characters which enable the entomologist to judge of ocality whence the material came. Thus California specimens . *clandestina* are paler, more distinctly marked than Eastern

·tis Lewisi *Grote.*

ıis species, from Colorado, differs by the fore tibiae having inal longer spines and in the disc of the thorax showing a :-shaped tuft. The ornamentation resembles *A. obeliscoides*, the uniform red brown primaries have no costal pale shading, the orbicular is rounded and larger, the pale subterminal line has no costal mark and the terminal space is concolorous. I agree with Dr. Harvey that the term *Pleonectopoda* should be regarded as sectional merely.

The collection of the Buffalo Society of Natural Sciences contains determined specimens of the following species of North American *Agrotis*:

1. **Agrotis gilvipennis** Grote, 6th Ann. Rep. Peab. Acad. Sci., 30.
Hab., Anticosti Island (Couper).

2. **Agrotis baja** *S. V.*; Grote, List N. Am. Noct., 9.
Hab., New York (Lintner); Canada (Norman).

3. **Agrotis Normaniana** Grote, Proc. Am. Ent. Soc., 1, 96; *Agrotis obtusa* Speyer, Stett. Ent. Zeit., 1875, 124.
Hab., Canada (Norman).

4. **Agrotis attenta** Grote, Can. Ent., 4, 231.
Hab., Maine (Packard).

5. **Agrotis perattenta** Grote, Can. Ent., 4, 231.
Hab., Maine (Packard).

6. **Agrotis sigmoides** Guenée, Noct., 1, 325 (Nature).
Hab., New York (Lintner).

7. **Agrotis vittifrons** Grote, Proc. Ent. Soc. Phil., 3, 527, Pl. 5.
Hab., Nevada (Hy. Edwards).

8. **Agrotis haruspica** Grote, Bull. B. S. N. S., 2, 212; *Agrotis unimacula*; Morr., Proc. Bost. Soc. N. H., 186.
Hab., New York (Harvey); Mass. (Joseph Lewis).

9. **Agrotis badinodis** Grote, Can. Ent., 6, 13.
Hab., Mass. (Thaxter); Texas (Belfrage).

10. **Agrotis c-nigrum** *Linn.*; Guenée, Noct. 1, 328.
Hab., New York (C. T. Robinson).

11. **Agrotis bicarnea** Guenée, Noct., 1, 328 (Nature); *Feltia ducens* Walk.; C. B. M. Noct., 363.
Hab., New York (Comstock); Mass. (Joseph Lewis).

12. **Agrotis innotabilis** Grote, Proc. Acad. N. Sci. Phil., 1874, 202.
Hab., California (Behrens).

13. **Agrotis auxiliaris** Grote, Bul. B. S. N. S., 1, 96.
Hab., Colorado (Mead; Billings); Texas (Belfrage).

14. Agrotis excellens *Grote,* Trans. Am. Ent. Soc., 5.
Hab., California (Hy. Edwards).

15. Agrotis phyllophora *Grote,* List N. Am. Noct., 61.
Hab., New York (C. T. Robinson).

16. Agrotis manifestolabes *Morrison,* Proc. Bost. Soc. N. H., 166.
Hab., Mass. (Morrison).

17. Agrotis herilis *Grote,* Bull. B. S. N. S., 1, 99.
Hab., Alabama (Grote); New York (Lintner).

18. Agrotis tricosa *Lintner,* 26th Ann. Rep. N. Y. S. Mus., 159.
Hab., New York (Lintner); Texas (Belfrage).

The Texan specimens in the Collection do not afford proper ground for Mr. Morrison's surmise that this species is a variety of *jaculifera.* They are merely a little smaller than the northern, and one ♂ has the hind wings paler at base.

19. Agrotis subgothica (*Haworth*), Steph. 2, Pl. 22, fig. 3; *Agrotis jaculifera* Guen., Noct. 1, 262, Pl. 5, fig. 4.
Hab., New York (C. T. Robinson); Vancouver Island (Hy. Edwards).

20. Agrotis quadridentata *Grote & Robinson,* Proc. Ent. Soc. Phil., 4, 491, Pl. 3, figs. 2, 3.
Hab., Nevada (Hy. Edwards).

21. Agrotis cicatricosa *Grote & Robinson,* Proc. Ent. Soc. Phil., 4, 492, Pl. 3, fig. 4.
Hab., Nevada (Hy. Edwards).

22. Agrotis Ridingsiana n. s.

This species, of which I have both sexes, has brush-like antennae in the male. It is closely allied to *quadridentata,* but differs at once by the hind wings in both sexes being blackish, as dark as in *herilis,* with white fringes. The ground color of the forewings is blackish. The costal region, median vein and ordinary spots are gray, the latter with a slight brown tinge which sometimes tinges the costal edge. The pale scales on veins 3 and 4 do not extend beyond the subterminal line except in one specimen (Nevada). The size is that of *quadridentata.*

Hab., Colorado (Ridings; Mead, No. 6); Nevada (Hy. Edwards).

23. Agrotis pitychrous *Grote,* Bull. B. S. N. S, 1, 82, Pl. 2, fig. 11.
Hab., New York (C. T. Robinson); Massachusetts (Morrison).

24. Agrotis fennica (*Tauscher*).
Hab., Kodiak (Behrens).

25. Agrotis scropulana *Morrison*, Proc. Bost. S. N. H., 165.
Hab., White Mountains (Morrison).

26. Agrotis opipara *Morrison*, Proc. Bost. S. N. H., 165.
Hab., White Mountains (Morrison).

27. Agrotis tessellata *Harris.*
Hab., New York (C. T. Robinson); Colorado (Mead); Canada (Saunders).

28. Agrotis Hollemani *Grote*, Can. Ent., 6, 156.
Hab., California (Holleman).

29. Agrotis lagena *Grote*, Can. Ent., 7, 26.
Hab., California (Hy. Edwards).

30. Agrotis formalis *Grote*, List N. Am. Noct., 61.
Hab., California (Behrens).

31. Agrotis geniculata *Grote & Robinson*, Trans. Am. Ent. Soc., 1, 349, Pl. 7, fig. 54.
Hab., Massachusetts (Thaxter).

32. Agrotis littoralis *Packard*, Proc. Bost. S. N. H., 11, 33.
Hab., Labrador (Morrison).

33. Agrotis rubi (*Viewig*).
Hab., Canada (Norman).

34. Agrotis conflua *Treitschke.*
Hab., Anticosti Island (Couper).

35. Agrotis muraenula *Grote & Robinson*, Trans. Am. Ent. Soc., 1, 352, Pl. 7, fig. 48; *Agrotis scandens* Riley, 1st Mo. Rep., 76.
Hab., New York (C. T. Robinson); Missouri (Riley).

I have formerly believed these species to be distinct; and now correct my opinion from the material before me.

36. Agrotis Wilsoni *Grote*, Bull. B. S. N. S., 1, 135.
Hab., California (Behrens; Hy. Edwards).

37. Agrotis specialis *Grote*, List N. Am. Noct., 62.
Hab., California (Behrens).

38. Agrotis gravis *Grote*, Bull. B. S. N. S., 2, 155.
Hab., California (Behrens; Hy. Edwards).

39. Agrotis intrita *Morr.*, Proc. Bost. Soc. N. H., 1874, 164.
Hab., Vancouver Island (Hy. Edwards).

Identified by Mr. Morrison, whose brief descriptions in this genus are a serious drawback to a knowledge of the species, the more so as the comparisons made in this case with *phyllophora* and in *exsertistigma* with *alternata*, are inapt and misleading.

40. **Agrotis exsertistigma** *Morrison*, Proc. Bost. Soc. N. H., 166.
Hab., California (Behrens).

41. **Agrotis silens** *Grote*, Can. Ent., 7.
Hab., Nevada (Hy. Edwards).

42. **Agrotis euroides** *Grote*, Proc. Acad. N. S. Phil., 202.
Hab., California (Behrens).

43. **Agrotis volubilis** *Harvey*, Bull. B. S. N. S., 2, p 118.
Hab., New York.

44. **Agrotis gladiaria** *Morrison*, Proc. Bost. S. N. H., 162.
Hab., Pennsylvania (Stultz); Canada (Norman).

45. **Agrotis venerabilis** *Walker*, C. B. M. Noct., 328; *Agrotis incallida* Walker, l. c. 330.
Hab., New York; Pennsylvania (Stultz).

46. **Agrotis cinereomacula** *Morrison*, Proc. Bost. S. N. H., 164.
Hab., New York.

47. **Agrotis velleripennis** *Grote*, 6th Ann. Rep. Peab. Acad. S., 29.
Hab., New York (Mead); Iowa; California (Behrens); Nevada (Edwards).

48. **Agrotis Rileyana** *Morrison*, Proc. Bost. Soc. N. H., 1874, 166.
Hab., New York (C. T. Robinson).

49. **Agrotis Bostoniensis** *Grote*, Proc. Acad. N. S. Phil., 1874, 203.
Hab., Massachusetts (Thaxter).

50. **Agrotis messoria** *Harris*. *Agrotis Cochrani* Riley. *Agrotis repentis* G. & R.
Hab., California (Behrens); Missouri (Riley); New York.

The California specimens are larger, of a more blackish tone, with the claviform distinctly marked. I have formerly, but always with hesitation, suspected them to be = *lycarum*, from Herrich-Schaeffer's figure. I am the first to suggest the present synonymy (Can. Ent., 6, 214).

51. **Agrotis balanitis** *Grote*, Bull. B. S. N. S., 1, 97, Pl. 3, fig. 14.
Hab., Colorado (Mead).

52. **Agrotis fuscigera** *Grote*, Can. Ent., 6, 155.
Hab., California (Behrens).

53. **Agrotis suffusa** (*S. V.*). *Agrotis telifera* Harris.
Hab., New York; Texas (Belfrage).

54. **Agrotis annexa** *Treitschke*.
Hab., Alabama (Grote); Texas (Belfrage).

55. **Agrotis rudens** *Harvey*, Bull. B. S. N. S., 2, 271.
Hab., Texas (Belfrage).

56. Agrotis saucia *Hübner*. *Agrotis inermis* Harris.
Hab., New York; California (Behrens).

57. Agrotis pastoralis *Grote*, Can. Ent., 7.
Hab., Colorado (Mead); Vancouver (Hy. Edwards).

58. Agrotis gagates *Grote*, Can. Ent., 7.
Hab., Colorado (Mead).

59. Agrotis incivis *Guenée*. *Anicla Alabamae* Grote.
Hab., Alabama (Grote); Texas (Belfrage).

60. Agrotis simplicius *Morrison*, Proc. Bost. S. N. H., 164.
Hab., Texas (Belfrage).

61. Agrotis lubricans *Guenée*, Noct., 1, 323 (*Noctua*).
Hab., Maine (Packard); Texas (Belfrage).

62. Agrotis plecta (*Linn.*).
Hab., New York (Grote).

63. Agrotis obeliscoides *Guenée*, Noct. 1, 293. *Agrotis sexatilis* Grote.
Hab., New York; Colorado (Mead); ?California (Behrens).

64. Agrotis Lewisi *Grote*, B. S. N. S., 1, 137, Pl. 4, fig. 10.
Hab., Colorado (Mead).

65. Agrotis sculptilis *Harvey*, Bull. B. S. N. S., 2, 271.
Hab., Texas (Belfrage).

66. Agrotis chortalis *Harvey*, Bull. B. S. N. S., 2, 272.
Hab., Texas (Belfrage).

67. Agrotis clandestina *Harris*.
Hab., California; Nevada (Edwards); New York (Lintner); Canada (Saunders).

68. Agrotis alternata *Grote*, Proc. Ent. Soc. Phil., 3, 526, Pl. 5, fig. 8.
Hab., Texas (Belfrage); New York (C. T. Robinson).

69. Agrotis cupida *Grote*, Proc. Ent. Soc. Phil., 3, 525, Pl. 5, fig. 7.
Hab., New York.

70. Agrotis cupidissima *Grote*, Can. Ent., 7.
Hab., California (Behrens).

NOCTUAE.

NONFASCIATAE.

CHARADRA *Walker*.

†**dispulsa** *Morrison*, Proc. Bost. Soc. N. Hist., 17, 213.

*JASPIDEA *Hübner*.

rrison, l. c., 213 (*Bryophila*).

*APOROPHYLA *Guenée.*

Yosemitae (*Grote*), Bull. B. S. N. S., 1, 113, Pl. 3, fig. 3 (*Cucullia*).

In letters Dr. Speyer believes this species to be identical with, or nearly allied to, the European *A. australis*, a species unknown to me.

CROCIGRAPHA *Grote.*

Normani (*Grote*), Can. Ent. 6, 115 (*Perigrapha*).

*MAMESTRA *Ochsenheimer.*

adjuncta (*Boisd.*), Guen. Noct. 1, 199, Pl. 6, fig. 10.

The eyes are hairy. By some mistake, in re-classifying Guenée's North American species of *Hadena* and *Mamestra,* I have placed *adjuncta* among the former.

teligera *Morr.*, Proc. Bost. Soc. N. Hist., 17, 215.
innexa *Grote,* Bull. B. S. N. S., 2, 123 (*Perigrapha*); Morr., Proc. Bost. Soc. N. H., 17, 214.
illaudabilis *Grote,* Can. Ent., 7, 27.

*HADENA *Schrank.*

divesta *Grote,* Can. Ent., 6, 217 (California).
indirecta *Grote,* Can. Ent., 7, 28 (California).

*ACTINOTIA *Hübner.*

Stewarti *Grote,* Can. Ent., 7, 28 (California).

*PRODENIA *Guenèe* (List, p. 17).

Commelinae (*Abb. & Sm.*), Ins. Ga., 2, 189, Pl. 95 (*Phalena*); Guen., Noct. 1, 162 (*Prodenia*).
flavimedia *Harvey,* Bull. B. S. N. S., 2, 274.
lineatella *Harvey,* l. c., 275.
praefica *Grote,* Can. Ent., 7.
† **ornithogalli** *Guen.*, Noct., 1, 163.

Praefica is Californian; the other species from the Atlantic district.

*GORTYNA *Hübner* (Supp. to "List," p. 216).

purpuripennis *Grote,* Proc. Acad. N. Sci. Phil., 1874, 206; *Orthosia baliola* Morr., Proc. Bost. Soc. N. Hist., 17, 148.

*GLAEA *Hübner.*

†**sericea** *Morr.*, Proc. Bost. Soc. N. H., 17, 151.

*ORTHOSIA *Ochsenheimer.*

helva n. s.[1]

disticha (*Morr.*),[2] Proc. Bost. Soc. N. Hist., 17, 217 (*Caradrina*).

*SEGETIA *Boisduval.*

†***orbica** *Morr.*, l. c., 216.

*XANTHIA *Hübner.*

(The North American specimens agree with *silago* in the purple collar. The reference to *gilvago*, List, 25, wants confirmation.)

ARTHROCHLORA *Grote* (Stett. Ent. Zeit., 1875).

Type: Feralia februalis *Grote.*

februalis *Grote*, List, 60.

PERIGEA *Guenée.*

luxa *Grote*, Bull. B. S. N. S., 2, 200.

enixa n. s.[3]

---

[1] This species has been suspected to be identical with the European *circillaris*, which latter name it should replace in the List. A large, coarse, buff yellow species, with large, inferiorly stained reniform; the lines double, blackish, waved, incontinuous; the hind wings shaded with fuscous; fringes and body squamae buff yellow; eyes naked, lashed.

[2] The specimen before me is an *Orthosia*, the eyes lashed; the markings are like *Orthosia*. *Caradrina*, as defined by Lederer, contains heterogeneous forms. However, Mr. Morrison's *Hadena rasilis* agrees better with *Caradrina* than with *Hadena*, from which it differs by the smooth, flattened, untufted abdomen. The following are recent synonyms of Mr. Morrison's so far as known to me; the last two references are not concurred in by Mr. Morrison. Mr. Morrison's generic references, where they differ in these instances, I regard as incorrect.

Copipanolis vernalis Morr. = Eutolype Rolandi.
Orthosia baliola Morr. = Apamea purpuripennis.
Xanthoptera nigrocaput Morr. = Xanth. Ridingsii.
Mamestra illabefacta Morr. = Mam. lilacina.
Hadena rasilis Morr. = Caradrina grata.
Bolina fasciolaris Morr. (nec. Hübn.) = Bolina nigrescens.

[3] ♂ ♀.—Smaller, paler, but resembling *xanthioides*. Ochreous; median lines tolerably approximate and distinct, black, irregularly dentate; t. p. line with the dentations terminating outwardly in a succession of black points, followed by inconspicuous white scales; subterminal line faint; ordinary spots separated by the median shade, concolorous, faintly black and white ringed; hind wings pale in both sexes, with a terminal ochrey band, broader and darker in the female; thorax like fore wings, abdomen like secondaries in color. *Expanse*, 25 m. m. Texas (Belfrage, No. 137, July 15).

INGURA *Guenée* ("List," p. 29.)

abrostoloides *Guen.*, Noct., 2, 311; ?*Edema producta* Walk.; C. B. M., 5, 1031.
†delineata *Guen.*, Noct., 2, 311.
praepilata n. s.[4]
occulatrix *Guen.*, Noct. 2, 313.
Hab., Canada to Texas.

*TARACHE *Hübner.*

†tenicula *Morr.*, Proc. Bost. Soc. N. H., 17, 218.

*HELIOTHIS *Hübner* (1806).

cupes *Grote*,[5] Trans. Am. Ent. Soc., 5.

*PROTHYMIA *Hübner.*

orgiae *Grote*,[6] Trans. Am. Ent. Soc., 5.

PLUSIA *Fabricius.*

metallica n. s.[7]

---

[4] ♂.—This species is smaller than *abrostoloides*, and characterized by the more medially outwardly and roundedly exserted t. a. line, limiting the paler basal space, so that there is a certain resemblance to *occulatrix* expressed. The t. p. line is shaped as in *abrostoloides*, but less waved, distinctly outwardly black marked, continued, geminate, acutely angulated superiorly, followed by two longitudinal black streaks; subterminal space with a brown tinge; orbicular an obscure yellowish point, dark ringed. The antennary and other characters are as in *abrostoloides*. Texas (Belfrage, No. 226).

Mr. Belfrage has also taken the allied but curious *Marasmalus histrio* Grote, in his locality (Bosque county). As *abrostoloides* Guen., I regard our common species, abundant in Alabama, probably redescribed by Walker. *Delineata*, described from Abbott's figures, may also be—*abrostoloides.*

[5] ♂.—This distinct species has fuscous or yellowish gray fore wings, with the veins paler marked. The lines are geminate, continuous; stigmata black encircled, bisannulate; subterminal line preceded by cuneiform black marks; subterminal line interrupted on the nervules, distinct, double, even; hind wings yellow-gray, with the nervules soiled, the usual terminal blackish fuscous band, interrupted medially by pale, and broad discal lunule; beneath yellow-gray, with a dentate common line; a discal streak on secondaries, and stigmata on fore wings very distinct and black. *Expanse*, 30 m. m. *Habitat*, Texas (Belfrage, May 5). (Plate 3, fig. 4.)

[6] Fore wings sulphur yellow, the external margin and fringes soiled with purplish. Two superposed dots indicate the reniform. An external oblique line of purplish atoms dilated on hind margin. Hind wings and abdomen whitish. *Expanse*, 20 m. m. *Habitat*, Texas (Belfrage, July 1). (Plate 3, fig. 2.)

[7] This species from California is registered in the List as "bractea S. V." From a fresh study of the specimen and a near comparison with a specimen of the European species in the Society's collection, I perceive the following differences: The size is smaller; the dark shadings of the wing are blacker; the metallic spot is smaller, with its oblique sides parallel, not outwardly bulging below the median vein; the red stain about the spot contrasts; on the subterminal space there is a distinctly metallic shade extending from vein 1 to opposite the cell, wanting in the specimen of *bractea* before me; beneath the fore wings are shaded with fuscous. The differences in color fall under the rule so ably suggested by Dr. Speyer. There can be no doubt of the common origin of the present Californian and European forms.

In addition to the foregoing, Dr. Harvey has described in the present Volume of the Bulletin a number of new species, a reference to which is unnecessary here. Mr. Morrison has also described two genera, probably belonging to the *Nonfasciatae,* in the Proc. of the Boston Soc. Nat. Hist., Vol. 17, under the names *Thaumatopsis* and *Tornos,* both unknown to me at this writing.[8]

---

[8] Since the present paper was prepared, I have also received a paper by Mr. Morrison from the Annals of the N. Y. Lyceum, in which several species are described, too late for mention at this time.

XXIV. On allied Species of Noctuidae inhabiting Europe and North America

(SECOND PAPER)

BY AUG. R. GROTE.

[*Read before this Society, March* 26, 1875.]

SINCE the reading of my first paper with this same title before this Society, October 21, 1874, fresh observations have materially reduced the number of species held to be common to both Continents. Not only have certain of the American specimens been found on careful study to afford characters which authorize a distinct name, but three American species, cited by Lederer as occurring in Europe, are believed now not to be native to that territory.[1] Although we are warranted in applying fresh names to the American forms, the mind is not to be misled by the title, and while we may consider certain now separate forms as descendants from a common and probably Pliocene stock (Bull. Buff. Soc. N. S., 2, 200), we feel that the arbitrary specific idea has undergone a fresh expansion, and that it can no longer be held by us in any concrete shape.

The List of Noctuidae originally given on page 193 of this Volume, comprising the species believed to be common to Europe and America, may now read as follows:

Species believed to be common to Europe and North America, exclusive of Labrador or circumpolar forms.

EUROPE.	AMERICA.
Agrotis baja (*S. V.*).	*Grote*, List N. Am. Noct., 9.
c-nigrum (*Linn.*).	*Guen.*, Noct. 1, 328.
plecta (*Linn.*).	*Guen.*, Noct. 1, 326.
fennica (*Linn.*).	*Guen.*, Noct. 1, 270.
rubi (*Viewig*).	*Grote*, Trans. Am. Ent. Soc., 5, 90.

---

[1] These species are ***Mamestra grandis*** (Stett. Ent. Zeit.), ***Hadena arctica*** and ***Euclidia cuspidea***, the latter apparently not the species intended by Lederer under the same name.

EUROPE.	AMERICA.
conflua *Treits.*	*Grote,* 6th Ann Rep. Peab. Ac. Sci., 29.
saucia *Hübn.*	*Agrotis inermis* Harris.
segetum (*S. V.*).	*Agrotis texanus* Grote.
ypsilon (*Hufn.*).	*Agrotis telifera* Harris.
Eurois occulta *Hübn.*	*Grote,* Can. Ent. 6, 13.
prasina (*Fabr.*).	*Guen.,* Noct. 2, 5.
Mamestra dissimilis (*Knoch.*).[2]	*Speyer,* St. Ent. Zeit., 141.
trifolii (*Rott.*).	*Speyer,* St. Ent. Zeit., 137.
Hadena rurea (*Fabr.*).	*Walker,* C. B. M. Noct., 171.
lateritia (*Hufn.*).	*Mamestra dubitans* Walk.
Dipterygia pinastri (*Linn.*).	*Grote,* Proc. Ent. Soc. Phil. 1, 218.
Euplexia lucipara (*Linn.*).	*Guen.,* Noct. 2, 65.
Apamea nictitans (*Bkh.*).	*Guen.,* Noct. 1, 126.
Heliophila pallens (*Linn.*).	*Guen.,* Noct. 1, 95.
Pyrophila tragopoginis (*Linn.*).	*Bethune,* Can. Ent. 2, 73.
Graphiphora incerta (*Hufn.*).	*Fitch,* 2d Rep. 25.[3]
Xanthia togata (*Esper*).	*Walker,* C. B. M., Noct., 461.
Scoliopteryx libatrix (*Linn.*).	*Walker,* C. B. M., Noct., 1011.
Plusia gamma (*Linn.*).	*Walker,* C. B. M. Noct., 899.
Hochenwarthi (*Hoch.*).	*Mösch.,* W. E. M., 4, 370.
Anarta melanopa (*Thunb.*).	*Anarta nigrolunata* Pack.
myrtilli (*Linn.*).	*Anarta acadiensis* Beth.
cordigera (*Thunb.*).	*Anarta luteola* G. & R.
Heliothis armiger (*Hübn.*).	*Heliothis umbrosus* Grote.

The preceding twenty-nine species are now considered to be common to the two Continents. In the case of *Hadena lateritia,* Dr. Speyer identifies the American specimens with an Alpine form of the European species. I have never seen an American specimen of *An. myrtilli,* nor a European one of *Agrotis rubi.* I have seen a specimen, said to be American, of *Apatela rumicis,* but I have never taken the species myself.

---

[2] This species is entirely unknown to me. I have also seen no European specimens of *trifolii.*

[3] *Orthosia instabilis* Fitch, is this species.

ERRATA.

Page 5, line 16, for " 2 " read " 4."
" 9, " 22, prefix a " †."
" 18, " 21, prefix a " *."
" 31, " 9, for " **viridisigma** " read " **viridisignata.**"
" 48, " 4, for " 443 " read " 473."
" 67, " 31, for " naked " read " hairy."
" 73, " 1, for " **viridisigma** " read " **viridisignata.**"
" 73, " 4, for " defected on the t. a. line " read " deflected on the cell."
(For other corrections and additions to the " List of North American Noctuidae," see pp. 54, 122–126, 155, 163, 193–199, 209–221, 301 and succeeding pages.)
Page 122, line 6, for " allows " read " allow."
" 170, " 12, for " complete " read " collect."
" 213, " 11, for " 133 " read " 132."
" 214, " 23, for " p. 9, line 1, p. 10 " read " p. 10, line 2, page 11."
" 214, " 24, for " 13 " read " 15."
" 229, for " IX " read " XIX."
" 233, for " XIX " read " XX."
" 237, category of *Anartia*, for " nervule....greatly curved " read " nervule....gently curved."
" 244, 3d line from bottom omit the commas between " Symphaedra " and " Alcandra," " Mycalesis " and " Otrea," " Yphthima " and " Philomela."
" 251, p-interrogationis *God.* 301 belongs to the form Fabricii.
" 255, line 4, omit the comma between " Cirsium " and " lanceolatum."
" 259, place a comma between " Viola " and " Vernonia."
" 261, line 3 of Mormonia, for " 127 " read " 128."
" 261, " 2 of montivaga, for " 126 " read " 127."
" 263, " 4 of Bellona, for " Matt." read " Mart."
" 270, for " XX " read " XXI."
" 278, line 27, for " Lines " read " Sides."
" 280, " 31, for " antennal read " ante-anal."
" 280, " 34, for " n. s." read " n. g."

INDEX TO PLATES.

I.

1. **Dicopis muralis.**
2. **Platysenta atriciliata.**
3. **Jaspidea lepidula.**
4. **Senta defecta.**
5. **Lithophane querquera.**
6. **Copipanolis cubilis.**
7. **Anarta subfuscula.**
8. **Glaea apiata.**
9. **Glaea inulta.**
10. **Tricopis chrysellus.**
11. **Catocala semirelicta.**

II.

1 and 2. **Helicopis Lindeni ♂.**

3 and 4. **Helicopis Lindeni ♀.**

III.

1. **Grotella septempunctata.**
2. **Prothymia orgiae.**
3. **Lygranthoecia roseitincta.**
4. **Heliothis cupes.**
5. **Pyrrhia exprimens.**
6. **Pyrrhia angulata.**
7. **Acopa carina.**

GENERAL INDEX.

Page.

- Ablepharon absidum 275
- Acerra normalis 162
- Acopa carina 279
- Acronycta acericola 154
  - americana 154
  - quadrata 154
  - subochrea 153
- Adita Chionanthi 63
- Adonisea pulchripennis 220
- Agrotis chortalis 272
  - cupidissima 303
  - gilvipennis 301
  - gravis 155
  - formalis 61
  - haruspica 212
  - incivis 303
  - Lewisi 303
  - obeliscoides 303
  - phyllophora 61
  - Ridingsiana 305
  - rudens 271
  - sculptilis 271
  - specialis 62
  - volubilis 118
  - Wilsoni 62
- Amnicola lustrica 138
  - orbiculata 138
  - pallida 138
  - porata 138
- Amolita fessa 158
- Anaea Andria 248
- Anicla Alabamae 159
- Annaphila mera 277
- Anthanassa texana 268
- Antiblemma canalis 76

Page.

- Apatela Radcliffei 270
  - persuasa 271
- Aporophyla Yosemitae 309
- Arctia bimaculata 150
- Argyria argentata 166
- Arta statalis 230
- Asopia devialis 229
  - squamealis 229
- Boletus alveolatus 102
  - chromapes 105
  - decorus 103
  - ferrugineus 104
  - firmus 103
  - Frostii 102
  - innixus 103
  - limatulus 104
  - magnisporus 103
  - miniato-olivaceus 101
  - pallidus 105
  - robustus 104
  - Roxanae 104
  - rubeus 102
  - Russelii 104
  - salmonicolor 200
  - serotinus 100
  - sordidus 105
  - speciosus 101
  - Spraguei 102
  - tenuiculus 103
  - viridarius 100
  - viscosus 101
- Bolina agrotipennis 280
  - jucunda 280
- Botis feudalis 231
  - gentilis 230

Page.
Botis hircinalis 232
  matronalis 231
  niveicilialis 232
  5-linealis 231
Bythinella obtusa 138
Calathus mollis 80
Calocampa curvimacula 191
  germana 192
  nupera 188
Ceratomia Hageni 149
Cercyonis Alope 242
Chlorosplenium epimyces 299
Chlosyne adjutrix 269
Chytonix iaspis 66
Conservula anadonta 17
Cryptus extrematis 205
  nuncius 205
  Samiae 205
Dasypogon teutonis 183
Dianthoecia insolens 65
  leucogramma 64
  palilis 273
  rufula 64
Dicopis Thaxterianus 196
Dryobota fibulata 112
Dryocampa rubicunda var. alba 153
Endropia Warneri 121
Epipaschia borealis 77
  superatalis 77
Eucoptocnemis fimbriaris 13
Euleucyptera cumatilis 220
Eustrotia apicosa 199
Feralia Comstocki 59
  februalis 60
  jocosa 58
Glaea olivata 120
  tremula 276
Graphiphora arthrolita 275
Grotella septempunctata 278
Hadena albina 157
  castanea 156
  confederata 143
  curvata 157

Page.
Hadena genialis 66
  marina 67
  vulgaris 197
Helicopis Lindeni 108
Heliophana mitis 220
Heliophila adjuta 158
  adonea 159
Heliosea pictipennis 220
Helotium naviculaesporum 299
  pullatum 298
  renisporum 299
Hemaris axillaris 147
  diffinis 147
  marginalis 147
  palpalis 145
  tenuis 147
Hemiteles conspicuus 208
  sessilis 208
  Smithii 208
Homohadena atricollaris 273
  induta 274
Ingura praepilata 310
Lepisesia Victoria 147
Leucobrephos brephoides 53
Lita sexsignata 280
Lithomia germana 198
Lithophane disposita 116
  fagina 115
  laticinerea 27
  oriunda 160
  socia 197
  tepida 27
  Thaxteri 196
Luceria Burgessi 109
  loculata 110
Lygranthoecia roseitincta 278
  saturata 74
Mamestra assimilis 113
  atlantica 12
  distincta 156
  puerilis 64
  lilacina 119
  marinitincta 273

Page.
Mamestra rosea ... 119
  vicina ... 156
Melaporphyria immortua ... 75
Melicleptria Californiensis ... 34
Mitrula lutescens ... 286
Moma Astur ... 213
Morrisonia evicta ... 53
Mydas audax ... 186
  carbonifer ... 186
  chrysostomus ... 187
Neominois Ridingsii ... 241
Ochria sauzalitae ... 216
Ombrophila subaurea ... 300
Oncocnemis Behrensi ... 65
Orthodes griseocincta ... 120
Orthosia crispa ... 276
  disticha ... 310
  helva ... 310
  infumata ... 160
  purpurea ... 125
Pachnobia cornuta ... 68
Perigea enixa ... 310
  luxa ... 200
Perigrapha innexa ... 123
Peziza albophileata ... 293
  atriella ... 297
  atrovenosa ... 288
  cannea ... 293
  cedrina ... 294
  cervinula ... 297
  diaphanula ... 295
  erigeronata ... 296
  exigua ... 296
  Gerardi ... 290
  gracilipes ... 294
  griseo-rosea ... 288
  hirtipes ... 290
  introspecta ... 295
  marginata ... 292
  nigrescens ... 295
  pollinaria ... 292
  protrusa ... 297
  pulviscula ... 297
  stenostoma ... 297

Page.
Philampelus mirificatus ... 148
Pisidium ferrugineum ... 140
  variabile ... 140
  ventricosum ... 140
Plusia bractea ... 72, 311
  fratella ... 161
  metallica ... 311
  8-scripta ... 72
  viridisignata ... 73, 311
Prodenia flavimedia ... 274
  lineatella ... 275
Prothymia orgiae ... 311
Pseudaglossa lubricalis ... 47
Pseudanthracia coracias ... 46
Pseudorthosia variabilis ... 161
Samia Cecropia ... 202
  Columbia ... 201
  Gloveri ... 204
Satyrodes Eurydice ... 243
Scopelosoma ceromatica ... 70
  Graefiana ... 69
  Morrisoni ... 70
  sidus ... 71
  vinulenta ... 70
  Walkeri ... 71
Semnopsyche Diana ... 259
Sphaerium croceum ... 140
  partumeium ... 140
  rosaceum ... 140
  secure ... 140
Stibadium spumosum ... 74
Stiria rugifrons ... 73
Taeniocampa pacifica ... 120
Taeniosea gentilis ... 143
  perbellis ... 144
Tarache terminimaculata ... 162
Thessalia Leanira ... 265
Toxocampa Victoria ... 163
Trichosea ludifica ... 218
Tricopis chrysellus ... 76
Xylomiges crucialis ... 277
  hiemalis ... 71
Zosteropoda hirtipes ... 68
Zotheca tranquilla ... 69

IIIII

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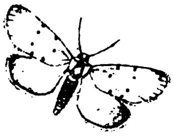

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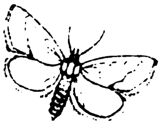

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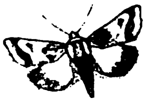

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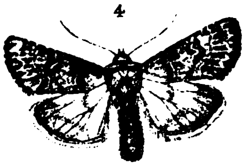

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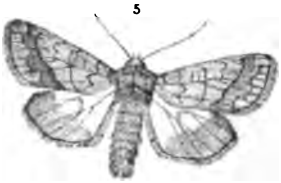

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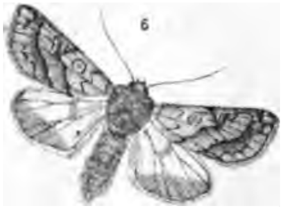

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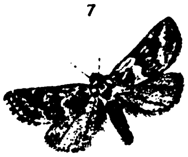

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The Buffalo Society of Natural Sciences has published and distributed the First Volume of its Bulletin, pp. 289, with Eleven Plates, April, 1873, to March, 1874, and subscriptions to this Volume have closed. Copies of the Volume complete may be obtained by remitting three dollars to the undersigned:

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CONTENTS.

XVI. On Attacus (Samia) Columbia and its Parasites. By H. A. Hagen, 201

XVII. Supplement to the List of North American Noctuidae. By Aug. R. Grote, 209

XVIII. Check List of North American Sphinges. By Aug. R. Grote, 224

XIX. North American Pyralides. By Aug. R. Grote, 229

XX. Synonymic List of the Butterflies of North America, North of Mexico. By S. H. Scudder, 233

XXI. Observations on North American Moths (Second Paper). By Leon F. Harvey, A. M., M. D. 270

XXII. Synopsis of the Discomycetous Fungi of the United States. By M. C. Cooke, M. A. 285

XXIII. On the genus Agrotis with Additions to the List of North American Noctuidae. By Aug. R. Grote, 301

XXIV. On the allied Species of Noctuidae inhabiting Europe and North America (Second Paper). By Aug. R. Grote, 313

Errata, 315

Index to Plates, 316

General Index, 317